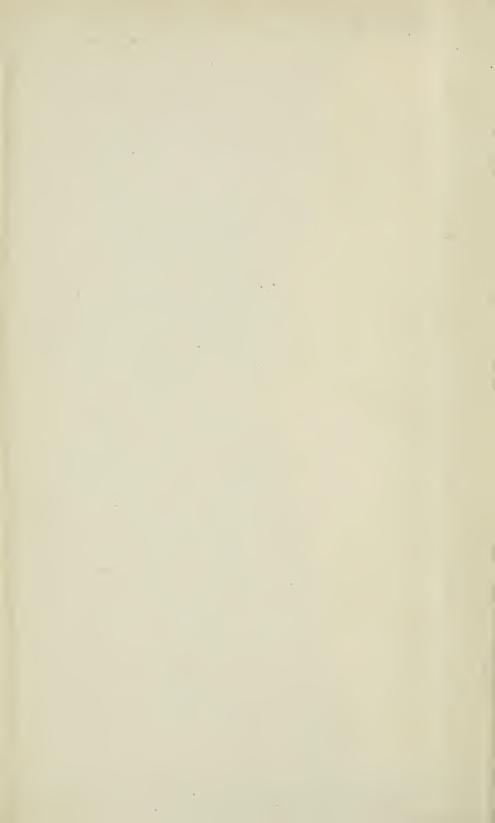
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AND

DISEASES OF WOMEN AND CHILDREN

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No. 1.

ORIGINAL COMMUNICATIONS.

THE DIRECT EXAMINATION OF THE FEMALE BLADDER WITH
ELEVATED PELVIS—THE CATHETERIZATION OF THE
URETERS UNDER DIRECT INSPECTION, WITH
AND WITHOUT ELEVATION OF THE
PELVIS.1

ВΥ

HOWARD A. KELLY, M.D.,

Professor of Gynecology and Obstetrics in the Johns Hopkins University, Baltimore, Md.

(With twenty illustrations.2)

THE efforts of many able men during this century have been directed toward devising a satisfactory instrument for the examination of the inner surface of the bladder, and perchance for the inspection, or possibly even the catheterization, of the ureters. The results of these labors have proven in general far

¹ An address delivered at the two hundredth anniversary of the Washington Obstetrical and Gynecological Society.

⁹ I am indebted to my friend Mr. A. S. Murray for the excellent photographs indispensable to a clear demonstration of this subject.

from satisfactory, as we have on one hand the complicated cystoscope of Nitze, of use only to a few specialists, and, on the other, the simpler fenestrated tubes of Grünfeld, yielding at most but meagre results.

The attention of the first workers in this field, even as early as the fifteenth century, was directed to the removal of stone from the bladder. One of the best and clearest statements of this pioneer work, accompanied with figures of the necessary instruments, is found in the "Surgery" of Peter Dionis.1 According to Diouis' practice the urethra was first stretched by his "dilatorium," after which the delivery of the stone was effeeted by means of two fingers well oiled and introduced into the vagina, or, in a virgin, into the rectum, while the other hand pressed downward into the pelvis from above, the stone being thus caught between the tips of the fingers and forced into the dilated urethra. When the stone appeared at the external meatus the upper hand was replaced by that of an assistant, enabling the surgeon to deliver the stone with a spoon-shaped instrument. This was called the "minor operation." In the "major operation" of Dionis the external orifice was incised laterally, the urethra dilated, and the stone delivered with forceps.

One of the oldest and most frequently employed methods of dilating the wrethra for the exploration of the bladder, and not yet altogether abandoned, consists in boring in succession the little and index fingers into the wrethra, following which the bladder is examined directly by touch. Prof. Simon improved these finger methods, which had been so long in vogue, and defined the limit of danger in the dilatation, thus giving the method scientific precision by substituting a definite plan, which he describes in three steps: 1. Incisions into the external orifice of the wrethra. 2. Dilatation of the wrethra by means of specula plugged with obturators. 3. Bimanual digital palpation of the bladder. He considered the safe limit in the dilatation of the nrethra to be two centimetres in diameter, or plus six centimetres in circumference. Beyond this maximum there is imminent risk of incurable urinary incontinence.

To establish certain claims to originality which I shall make, it will be necessary for me first to dwell somewhat in detail upon Simon's work, that I may point out clearly the differences

¹ Heister's German Edition, Augsburg, 1734, pp. 253.

between his and my own methods. In carrying out the first step in Simon's method, the most unyielding part of the canal, the external meatus, is incised in two places, one-quarter of a centimetre in depth anteriorly and one-half centimetre in depth posteriorly. The dilatation is then effected by a series of seven hard-rubber specula with mandarins varying from three-quarters of a centimetre to two centimetres in diameter.

A dilatation of two centimetres is necessary to carry out the next step, the introduction of the index finger into the bladder, by means of which the entire inner surface of the bladder is explored. We can appreciate the practical value of this method by referring to Simon's description of the removal of a vesical polyp, which he accomplished by inserting, upon his index finger, a spoon and pair of forceps into the bladder, by means of which he grasped and removed the polyp. Simon, in speaking of the utility of digital palpation, says: "Every change in form and consistence of the vesical mucosa can be detected by the palpating finger."

As it is important to note precisely his estimate of the value of the endoscope, I quote his remarks as follows: "Endoscopy is also made easier, but the value of this procedure is much less than palpation, as one can never illuminate more than a small area of the bladder, and thus only by chance discover papillary enlargements, ulcers, etc." As to inspection of the ureters he says: "Even with the magnesium light we have endeavored in vain to discover the ureteral orifice. Endoscopy is useful in illuminating all points that have been discovered by touch, and for the illumination of small areas is of great service in the female as well as in the male."

Simon's historical work in the field of ureteral catheterization is well known throughout the world. 'At the date of his publication (1875) he had succeeded in sounding the ureters seventeen times upon eleven different women. He speaks of its practical utility in the following terms: "As to the assurance of being able to introduce a sound or catheter—in my practice on corpses and the seventeen attempts on the living subject, I have not succeeded in perfecting my method to such an extent that I can feel confident of introducing the sound into the nreter at every sitting, but I believe I could do it in the majority of cases." He further says: "I have had no opportunity to catheterize the ureter in disease."

Grünfeld, one of the ablest followers of Simon in this field, figures a fenestrated endoscope (page 29), and I quote the following important statement concerning its use: "In the examination of the female urethra or bladder one proceeds best by placing the subject in the same position as for the introduction of the vaginal speculum-that is, on the back, with abducted and flexed thighs. There is no difference in the posture for the examination of the urethra or bladder." To Grünfeld we owe the simpler endoscope, consisting of a metal tube, blackened on its inner surface, and having a plane glass placed obliquely at its vesical extremity. For the purpose of illuminating the interior of the bladder he employs a frontal mirror, to which is attached an electric light. He has also estimated the angle of inclination of the speculum in viewing the ureter at 30° to 35°, as well as the depth necessary to insert the speculum to bring the ureter into view. Catheterization of the ureter is accomplished according to Grünfeld's method by passing a small catheter through the urethra parallel to the endoscope; it is then inclined with the endoscope to the proper angle and engaged in the ureteral orifice; the endoscope is then withdrawn and the catheter pushed further into the ureter.

The present status of cystoscopic work in women cannot be better shown than by quoting our own eminent authority, Dr. Skene, so well known for his original investigations in this field, who says: "The cystoscope of Nitze and Leiter is the only instrument for thoroughly investigating the bladder."

Rutenberg, who considered the ordinary methods of specular examination either too complicated or inefficient, devised a speculum with a glass partition, and a little tube running down the side of the speculum, to which was attached a rubber ball for inflating the bladder with air. By means of a mirror, attached to a handle, which could be pushed in and out and rotated, the various parts of the bladder wall were inspected. To use this instrument it is necessary to dilate the urethra up to two centimetres in diameter (wanting a half-millimetre), and the patient must be under profound anesthesia. Prof. Winckel, of Mu-

¹ "Der Harnröhrenspiegel (das Endoscop), seine diagnostische und therapeutische Anwendung," Vienna, 1877.

² "Treatise on the Diseases of Women," New York, 1889, p. 697.

⁸ Von Billroth and Luecke's "Handbuch," vol. iii., p. 343, Stuttgart, 1886.

nich, commends this method, stating that he has used it ten times with great satisfaction.

Quite recently a brief but suggestive article appeared, written by Dr. Robert T. Morris, in which he clearly indicates one of the lines of progress in this field of work in stating his preference for straight, open specula in the examination of both the male and female bladder.

An excellent, clear résumé of the utility and methods of catheterizing the ureters, from the pen of Dr. Brooks H. Wells,2 defines the status of the subject in its most recent developments. From that standpoint I now desire to conduct those who will follow my methods into a new and simpler technique, which will in due time bring investigations of this character within the range of studies of all the students in our medical colleges.

DESCRIPTION OF A NEW METHOD.

None of the methods thus far described can be called either simple or satisfactory for general use. As a consequence of this a direct examination of the female bladder and the local treatment of its diseases, especially of the simpler affections, have been practically abandoned for the past ten years. Such an idea as a simple direct inspection of the bladder and the direct catheterization of the ureters, practicable for all, is not entertained by any one.

It has been my good fortune to work out a simple method which exposes the whole inner surface of the bladder, and the ureteral orifices, to a direct inspection without any intervening fenestra or mirror. By this method any gynecologist, after a little practice, should be able in almost every case to catheterize either ureter within a few seconds after the introduction of the speculum. The bladder exposed in this way may be inspected with as much ease and more directly than the larynx, the posterior nares, or the fundus oculi.

The following instruments and accessories are required for the examination: female catheter; a series of urethral dilators; a series of specula with obturators; common head mirror and a lamp, Argand burner, or electric light; long, delicate mousetoothed forceps; suction apparatus for completely emptying the bladder; ureteral searcher; ureteral catheter without a

¹ The American Gynecological Journal, July, 1893.

² New York Journal of Gynecology and Obstetrics, 1893, iii., p. 283.

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handle; several bran bags or an inclined plane for elevating the pelvis.

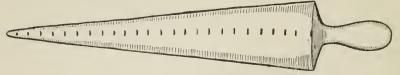
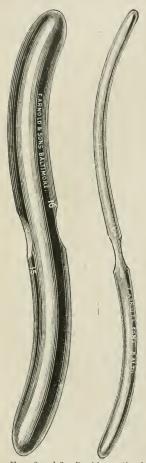


Fig. 1.—Urethral calibrator; short lines indicate diameter in millimetres.

The bladder is first emptied as completely as possible by the



Figs. 2 and 3.—Double urethral dilators. The smaller sizes, Nos. 5 and 6, are only used when calibre of ureter is very small or narrowed by stricture.

eatheter. A residuum of from one to several teaspoonfuls of urine always remains, even though the bladder is evacuated with the patient in a standing posture. In order to determine the proper dilator to begin with, I calibrate the meatus urinarius externus by means of a slender metal cone ten centimetres long, marked in a graduated scale from its point, two millimetres, to its upper end, twenty millimetres in diameter (Fig. 1). The calibrator is pushed into the urethra as far as it will readily go, and the marking at the meatus externus noted. A dilator of the diameter indicated by the calibrator is then passed through the urethra by holding the handle at first well above the level of the external meatus, upon which the point rests, and carrying the dilator on through the urethra and into the bladder by a gentle sweeping curve of the hand downward and inward toward the nrethra.

By introducing the dilators as they occur in the series, the average female urethra can easily be dilated up to twelve millimetres in diameter with only a slight external rupture. I have never seen a tear more than two or three millimetres in length and from one to one and a half in depth. I

have as yet had no occasion to incise the meatus to avoid extensive rupture.

The metal dilators which I use for this purpose are doubleended and of a flattened S-shape, each end representing a single dilator in the series. The points are conical. A flattened area



Fig. 4.—Hips in miderate elevation for cystoscopic examination and direct catheterization of ureters. Cystoscopic and ureteral instruments on tray in foreground.

in the middle, upon which the diameters of the dilators are marked, affords a convenient grasp. The series begins with No. 5 and runs in pairs up to No. 20; thus Nos. 5 and 6, 7 and S are made of one piece of metal, and so on through the series (Figs. 2 and 3). The calibre of both dilators and specula is marked in millimetres.

As soon as a dilatation of from twelve to fifteen millimetres is reached a speculum of the same diameter as the last dilator is introduced and its obturator removed.

The hips of the patient are now elevated on the cushions, or on a short inclined plane, twenty to thirty, or even forty, centimetres (eight to twelve or sixteen inches) above the level of the table (Figs. 4 and 5).

There are sixteen specula (Figs. 6 and 7), varying from five to



Fig. 5.—Hips in extreme elevation for cystoscopic examination and direct catheterization of ureters.

twenty millimetres in diameter, the successive sizes increasing by one millimetre. The specula are cylindrical, nine and a half centimetres long, and each is provided with a conical mouth to assist in reflecting the light into the bladder. Each speculum is fitted with an obturator (Fig. 8). The calibre is marked in millimetres on a little handle at the side of the speculum.

The examiner now puts on the head mirror and prepares to inspect the bladder. An electric drop light, an Argand burner, a lamp, or a candle in a dark room, is held close to the patient's

symphysis pubis so that the light can be easily caught by the head mirror and reflected into the bladder. A good direct light from a window will also suffice.

Upon withdrawing the obturator, the pelvis being elevated,

the bladder becomes distended with air, and by properly directing the reflected light all parts of its interior are accessible to a direct inspection (Fig. 9).

If a pool of urine remains in the bladder it should be withdrawn by means of a simple suction apparatus (Fig. 10). If there is a residuum of not more than two or three cubic centimetres, it can easily be removed by little balls of absorbent cotton

grasped with long, delicate mouse-toothed forceps, the teeth of which are slightly recurved (Fig. 11). The facility with which foreign bodies are removed from the bladder by this method can be demonstrated by dropping a pledget of cotton into the bladder-it can be seen with the utmost ease, picked up, and removed without difficulty.

The posterior wall of the air-distended bladder lies two to five centimetres distant from the anterior wall, and over this white background, which first presents itself to the eye of the observer, is visible a beautiful network of branching and anastomosing vessels. The veins accompanying the arteries are easily distinguished by their dark color. The larger vessels evidently come to the surface from the deeper layers of the bladder, when they branch stellately, divide, and anastomose.

By elevating the handle of the speculum the Fig. 6.-No. 6 field of vision sweeps over the base of the bladder speculum (natural size). This size until in some cases the region of the interureteric is used when ure- ligament comes into view, often marked by a slightthrais very small by elevated transverse fold or a distinct difference or in inspecting by elevated transverse fold or a distinct difference the bladder in in color. By turning the speculum thirty degrees to one side or the other and looking sharply, a

ureteral orifice is discovered (Fig. 12). While inspecting the

children.

ureter I have frequently observed little jets of urine ejected at short intervals, like a miniature fountain; in pathological cases

I have seen pus and blood flowing from one ureter while the other discharged normal urine

The ureteral orifices and their surroundings are not constant in appearance. Sometimes the orifice appears as a dimple or a little pit, or, in inflammatory cases, as a round hole in a cushioned eminence: at other times as a A with the

point directed outward; again it may be scarcely visible even to a trained eye, appearing as a fine crack in the mucosa, and occasionally is so obscure as to be recognized only by the jet of urine as it escapes, or by a slight difference in the color of the mucous membrane at that point. In rare cases it has the form of a truncated cone with gently sloping sides; this appearance is most apt to be developed in the knee-breast position.

The bladder mucosa is usually of a slightly deeper rose color around the ureter, and in the presence of an inflammatory process it even appears deeply injected. In one instance the left ureteral orifice was marked by a large vessel which emerged directly from its lumen and then divided. My observations upon the appearance of the female ureteral orifice coincide closely with the clear description given by E. Hurry Fenwick, of London, in his work on the male bladder.1

In the direct inspection the ureteral orifice ium (natural size). This always appears to lie nearer the urethra than maximum size used in one would anticipate. This is a result of the illusion produced by the foreshortening of the base of the bladder; the foreshortening also

accounts for the difficulty in finding the orifice immediately in ¹ British Medical Journal, June 16th, 1888.



Fig. 7.—No. 16 specucystoscopy or catheterization of ureters.

those cases in which it appears as a mere slit in the vesical mucosa. Quite the contrary is true in the free-hand catheter-

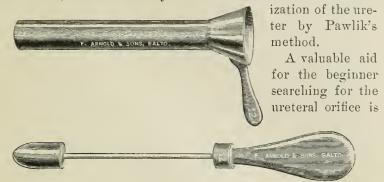


Fig. 8.—Speculum and obturator (two-thirds natural size).

the following: A point is marked on the cystoscope five and a half centimetres from the vesical end, and from this point



Fig. 9.—Direct inspection of bladder by reflected light; electric bulb with reflector held above symphysis pubis; hips in moderate elevation.

two diverging lines are drawn toward the handle with an angle of sixty degrees between them (Fig. 13). The speculum is

introduced up to the point of the V, and turned to right or left until one side of the V is in line with the axis of the body; then by elevating the endoscope until it touches the floor of the bladder the ureteral orifice will usually be found within the area covered by the orifice of the speculum. The ureteral orifice can often be found by an adept at once, and almost instinctively, by a single movement of the speculum after its introduction into the bladder.

In order to ascertain whether it is the ureter which lies within the field, I use as a searcher (Fig. 14) a long, delicate sound with a handle bent at an angle of 120°, which is introduced through the speculum into the suspected ureteral orifice (Fig.

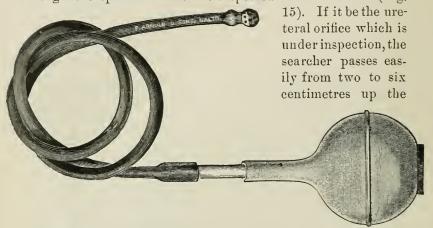


Fig. 10.—Suction apparatus (three-fourths natural size) used for withdrawing residual urine.

ureter, and the lateral walls of the orifice are slightly raised, appearing as distinct folds with a dark pit between them. The searcher may be withdrawn and a ureteral catheter at once introduced, if it is desirable to collect the urine direct from the kidney. The ureteral catheters which I use for direct catheterization are quite different from those heretofore employed. They are straighter, and either have no handle or only a small one which will readily pass through the No. 10 speculum (Figs. 16, 17, 18). The catheter may be left in place some minutes or an hour or more. The urine which accumulates in the meantime in the bladder necessarily represents the discharge of the opposite kidney; in this way the urine of both kidneys may be isolated by simply introducing one catheter.

By placing the patient in the genu-facial posture (Fig. 19) an

extreme distention of the bladder is obtained in the form of a flattened ovoid. In this posture the interureteric ligament also comes sharply into view, but the ureters are not so readily seen, as they are concealed by the outer extremities of the fold. The genu-facial posture is indispensable in some inflammatory cases when the bladder will not balloon out in the ordinary posture owing to its thickened walls. A satisfactory inspection can also be made in many cases in the left semi-prone position by elevating the pelvis on a pillow.

Simple Direct Catheterization without Elevation. -After some practice it is possible even to catheterize the ureters with the patient simply in the dorsal position without elevation of the pelvis. The success of such an attempt depends upon the examiner's familiarity with the position and appearance of the ureteral orifice on the posterior wall of the bladder. The manipulation necessary to expose the ureteral orifice becomes with practice almost instinctive. The bladder is emptied by catheter, the ureter is dilated, and the speculum, No. 10 or 12, introduced from five and a half to six centimetres, and its outer end elevated until the base of the bladder appears, when it is turned thirty degrees to the right or left, and with a little patience in searching the ureteral orifice is found. To prevent the residual urine from obscuring the field the speculum is gently pressed against the mucous membrane; it is then only necessary to take up the urine with pledgets of cotton as it flows from the ureter into the speculum.

An anesthetic is not necessary for cystoscopy or catheterization of the ureters, unless the urethra is to be dilated up to No. 14, 15, or 16. In nervous women it is often best to make a thorough examination first under anesthesia. Subsequently a satisfactory illumination of the bladder can be made, and the ureters catheterized and any ordi- cate mouse-tooth nary treatment readily applied through the No. 10 ed forceps (threespeculum without anesthesia. I have succeeded size).

Fig. 11. - Deli-

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Fig. 12.—Speculum inclined 30° to left, exposing right ureter, searcher being introduced.
without causing marked discomfort. Anesthesia will be em-

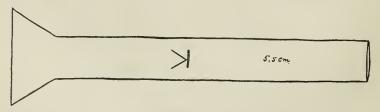


Fig. 13.—Speculum marked for finding ureter automatically.

ployed less frequently as the examiner gains skill and confidence

in manipulating the instruments. A pledget of cotton saturated with a five-per-cent cocaine solution, inserted into the urethra

seven minutes beforehand, greatly facilitates the dilatation and is often the best form of anesthesia.

Four specula, Nos. 8, 10, 12, and 14, and dilators Nos. 7 and 8, 9 and 10, 11 and 12, 13 and 14, 15 and 16, mouse-

toothed forceps, aluminum applicator, ureteral searcher, and one ureteral catheter are practically the only instruments required for general purposes of diagnosis and treatment.



Fig. 14.

Fig. 15.

Fig. 14.—Ureteral searcher.
Fig. 15.—Left ureteral orifice exposed and searcher engaged.

A wide field is opened to the gynecologist by these simple means of diagnosis and treatment. It is an enormous stride forward to be able to expose all parts of the bladder walls so

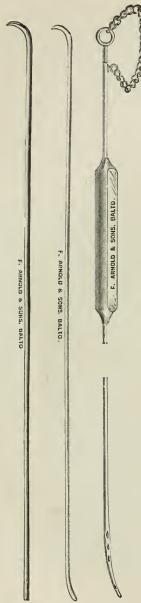


Fig. 16. Fig. 17. Fig. 18. Figs. 16 and 17.—Ureteral catheters without handles, for direct catheterization through speculum.

the terization through speculum.
Fig. 18—Ureteral catheter with
handle sufficiently reduced to allow
speculum to be withdrawn after catheter is engaged in ureteral orifice.

that they can be seen with ease and without other aid than a simple open speculum and a suitable posture.

It becomes a duty to examine at once all bladder affections which are more than trifling, to disclose the exact nature and the extent of the discase. Frequently the examiner will be astonished by discoveries which will relegate one by one a large number of functional affections to the domain of positive demonstrable discases.

To generalize from the cases lately under my care, I am able to say that cystitis is often a localized disease limited to a special area of the bladder. Tubercular and ulcerative cystitis can be detected at once. mors, calculi, and fistulæ are readily found, particularly with the patient in the genu-facial posture. Cicatrices stand out in sharp relief. Cases usually called irritable bladder show definite areas of hyperemia surrounding and between the ureteral orifices. In a case of incontinence recently under my care I found an extreme injection of the mucosa over the interureteric ligament.

I have a patient now under observation in whom the ordinary means of diagnosis had been employed by several able practitioners without revealing the source of a persistent pyuria. A microscopic examination of the urine showed that it contained tubercle bacilli. On cystoscopic examination the bladder was found to be inflamed at its base, with several red, papillary projections in the right

inferior quadrant of the posterior hemisphere. In front of this papillary mass there were about twelve tubercles, the rest of the bladder appearing normal. Both ureteral orifices discharged clear urine. A small quantity of pus exuded from the papilloma during the examination, and on probing it with the searcher a sinus was discovered leading back of the uterus into a tuberculous ovary or tube on the right side. On placing the patient in



Fig. 19.—Cystoscopy in genu-facial posture; speculum introduced into bladder; dilator under right thumb indicates position of anus.

the knee-face position the rest of the bladder ballooned out, while the drawn, puckered appearance about the fistula stood out in strong contrast, indicating clearly the focus of disease.

In hysterectomy for carcinoma of the cervix, and in some hysteromyomectomies, it is of the utmost importance to know throughout the operation the exact location of the ureters, to avoid tying or cutting them. I have recently overcome this

2

difficulty in a case of cancerous uterus by the following device: The right ureter was exposed under a No. 12 speculum without elevating the hips, and a bougie, one and a half millimeters in diameter and twenty-five millimetres long, was engaged in the ureter and pushed up over the pelvic brim toward the kidney until only three or four centimetres of its length remained outside the meatus (Fig. 20). The speculum was then withdrawn and reintroduced alongside the bougie, and the opposite ureteral orifice exposed and a similar bougie introduced. The abdomen was then opened, and the ureters were distinctly felt



 ${\rm Fig}~20$ —Hard-rubber bougies introduced into both ure ters previous to hysterectomy for carcinoma.

like hard cords throughout the operation. A point of great practical importance was that the bougies served to keep the ureters pressed down against the pelvic wall away from the uterus. With this assistance the broad ligaments were rapidly tied off without fear of including a ureter.

Treatment is greatly facilitated, as direct applications to localized areas can be made with the same ease as upon the exterior of the body. In view of this improvement it can no longer be deemed right to inject strong solutions or escharotics into the bladder, which affect equally its entire inner surface when the disease is limited to a definite area. Forceps, snares,

tenacula, knives, and instruments for measurement can be readily used through the larger specula, from No. 12 up.

I have recently had the pleasure of demonstrating, in my clinic at the Johns Hopkins Hospital, these methods of examination and treatment of diseases of the bladder and the catheterization of the ureters under direct inspection, to a large number of physicians from all parts of the United States, as well as to my friends Prof. Winckel of Munich, and Prof. Pozzi of Paris. I have also given a demonstration at the Kensington Hospital for Women in Philadelphia before a number of gynecologists especially invited by Dr. C. P. Noble, as well as in the presence of the Johns Hopkins Hospital Medical Society.

[Note.—The instruments have all been made by Mr. Arnold, of Baltimore, who, at my special request, has not stamped his name upon them. He has also, at my request, submitted all instruments to me for inspection before sending them away.]

MYOMA UTERI AND ITS TREATMENT.

BY

ANDREW F. CURRIER, M.D., New York.

HE would have been considered a rash man who had prophesied a generation ago the existing status in the gynecological world of the subject of hysterectomy for myoma. Of the pioneers in ovariotomy, the survivors can almost be numbered on the fingers of a single hand. What a sublime work was theirs, creative of the entire vast field of abdominal surgery with its inestimable blessings to humanity! And yet, of the brave men who were operating within the abdomen fifteen years ago, there was scarcely one who did not recoil from an attack upon a tumor which, when the abdomen was opened, proved to be uterine and not ovarian. Of those who had the hardihood to attack a uterine tumor and remove the uterus with the tumor, there were few who cared to have much said about their operations or the results which attended them. Keith's record long stood peerless, almost faultless, in a field in which, by his own confession, he felt very uncomfortable and much dissatisfied. Two episodes in the recent history of myoma are of importance and interest in connection with the development of the subject. One concerns the method of treatment recommended by Schröder, which rested upon the proposition that, if the uterine canal were intact, the myomata involving only the muscular structure might be removed and the organ with its functional power be preserved. This proposition was intended, of course, to apply only to mural tumors. The tumor having been removed, the cavity which resulted was to be securely closed from below upward by successive layers of sutures. In spite of the powerful advocacy of Schröder himself, backed by such distinguished followers as Martin and Hofmeier, this method of treating uterine myomata has never become popular. Perhaps it is well that it has been so, for the method involves much technical difficulty; it allows no avenue of escape for decomposing material, should any be present; and finally, and fatally, a uterus which is myomatous is not always cured by the removal of its tumors which are most apparent. The conditions may be repeated, and the patient is subjected to additional risk with the bare possibility of impregnation and the well-known fact that a completed pregnancy in uteri thus diseased is unusual. Therefore, unless the prospect of complete cure of the myomatous disease were offered by Schröder's operation, it would not be, in my judgment, an operation to be recommended.

The other episode—if the term be allowed—concerns the treatment of myoma nteri with galvanism, and is associated with the names of Kimball, Cutter, Freeman, and Apostoli.

Apostoli has done more than any one else to bring this method into prominence, and has introduced systematic conditions and regulations from which, at one time, a great deal was confidently hoped. I have studied this method of treatment carefully and without bias-unless it be a bias in its favor-and while I am satisfied that it is efficient in relieving the most urgent symptoms connected with myomata uteri, and for that reason not to be turned aside contemptuously, as is the habit in some quarters I have ceased to believe that it is radically curative in its effects, except in a few rare and not always easily explained cases, and in some others in which extensive processes of disintegration have been provoked which involve great risk to the health and life of the individual. To attempt to accomplish a cure by means so uncertain is not to be commended as a rule. The surgical method may involve great risks, but a definite result will be reached by it, in one way or another, in a reasonably brief period of time, which cannot be said of the method with galvanism. The most that the most ardent advocates of the electric method

claim is "symptomatic cure." But if the symptoms are merely in abeyance, and the conditions for their reawakening still exist in the form of an abdominal tumor, who shall say that the symptoms may not recur, perhaps in an exaggerated degree, and find the patient less well prepared to endure them than before, or the prolonged treatment which is necessary for their relief? I am personally familiar with a number of cases in which the galvanic treatment was conscientiously carried out with such a history.

The treatment of myomata with ergot or other substances which act upon involuntary muscular fibre and impair nutrition, is another method which may be efficient in certain cases, but if these substances are used in quantities sufficient to produce their physiological effect they may do injury in addition to their beneficial effect. I have seen gangrene with septicemia following such treatment, which was not appreciated until the tumor was removed from the body.

We now approach the important practical question, Are the symptoms which attend uterine myoma of sufficient gravity to warrant the exposure of the patient to the risks of a severe and possibly fatal operation, together with the mutilation attending the removal of an important organ? This is a large question, and it may not be possible to answer it as comprehensively as could be desired within the limits of this paper.

It was said by Keith a few years ago that he had never known of a woman dying directly from fibroid tumor of the uterus. Perhaps he may not have desired to be understood too literally in this remark, or he may not have considered for the moment the toughness and hardiness of Scotch women as compared with those of almost any other nationality. But be that as it may, there are few physicians with any considerable experience who have not seen women whose lives were rendered most pitiable and fruitless by the constant loss of blood, the pain, and the disturbance of function attending uterine tumor, and who died prematurely with these symptoms unrelieved.

The symptoms of this disease depend not alone upon the conditions immediately associated with the tumor, but upon the sensitiveness of the individual as well, and this point has often been overlooked in the study of the subject. It is quite true that a woman of insensitive nature, especially if her life be passed in out-of-door employment, may be unconscious of the presence of such a tumor, and may be able to adjust herself to the change in surroundings as the tumor increases in size.

Many negro women, many German women, are thus insensitive, but I do not remember to have ever seen a French or Irish woman who could bear the presence of such a tumor with unconcern. Of those whose lives are passed principally in-doors, and who take only such exercise as their household duties demand, there are very many to whom such a tumor is a continual source of trouble and unhappiness. The symptoms which are to be considered as legitimate attendants of myoma are hemorrhage, pain, and disturbance of function. Consideration must also be given to those cases in which these symptoms are absent.

It is not usually the very large myomata which give rise to excessive hemorrhage. That symptom is most frequently associated with myomatous degeneration of the entire uterus, the organ being more or less symmetrically enlarged to the size of the second or third month of pregnancy, with intramural growths, and with those cases in which the tumor is implanted within the immediate neighborhood and influence of the uterine arteries. The stimulus of the monthly pelvic congestion, and the excessive nutrition with consequent active tissue changes of the endometrial mucous membrane, are probably the chief inciting causes to hemorrhage; and whether this consist in a continuous leakage with an occasional gush, or a sudden flooding at the menstrual epoch, the effect is the same in the production of extreme anemia and unfitness for the duties of life.

The pain which accompanies myomata of the uterus is often intense, especially at the menstrual epoch when they participate in the universal pelvic congestion. It is not size alone which regulates the painfulness of such tumors, for the small pedunculated or sessile tumors often cause pain which is almost unendurable. If the tumor is large enough to encroach upon surrounding structures the pressure symptoms may be distressing, but it sometimes happens that tumors which are quite large give rise to very little complaint or annoyance. The effect of constant pain, imperfectly relieved by opiates, in making the burden of life too heavy to be borne with any degree of satisfaction, is the history of many a woman with this disease. The disturbance of function which may be present varies within wide limits. Constipation is a very common and often a distressing symptom, especially if inflammatory phenomena have attended the development of the tumor and caused adherence of the rectum to contiguous structures. The functions of digestion and assimilation are also frequently disturbed either by the pressure of the tumor or by the adhesions which have accompanied the inflammation it has provoked. The effect of the tumor upon the nervous system, both on account of the pain which it causes and the mental distress and anxiety as to the possible result, is often very pronounced.

In a minority of cases none of these bad symptoms are present. The patients are sometimes entirely unconscious that anything like a tumor exists until the announcement is made by the physician who discovers it, or there may be merely the annoyance attending the increase in the size of the tumor, the sense of weight and pressure, and the mortification of the changing contour of the abdomen when the tumor is very large. Again, as in growths in other parts of the body, and especially in those in which the enlargement proceeds very slowly and the structure is very dense, there may be spontaneous regressive metamorphosis, atrophy, and diminution in size, or possibly the abundant deposit of lime salts. It is quite possible that a tumor of the uterus may develop, degenerate, and disappear without the attention of its possessor being called to the fact of its existence, but such cases are quite exceptional.

An interesting point which has as yet received very little study concerns the rate of development of myomata. Kleinwächter, who has recently given some attention to the subject, states in his article that Gusserow and Schorler are the only ones besides himself who have published the results of their work. His study includes the analysis of forty cases in which he was able to observe their progress and symptoms. He was able in some cases to detect evidences of a tumor within three months after it had begun to grow. He observed that the rate of growth in most cases was slow-slower in the fibroids and fibromyomata than in the myomata. Temporary enlargement was often noticed during menstruation and pregnancy, and temporary diminution in size during and after exhausting disease. In only three cases did he observe permanent diminution in the size of the tumor and more or less complete disappearance. a large number of cases not only did the tumor fail to degenerate and atrophy after the occurrence of the menopause, but it even continued to grow; and this observation of Kleinwächter's, so contrary to the teaching of the past on this subject, is not an isolated one, for experience is accumulating which shows that such a history is not at all uncommon.

¹ Zeitschr. f. Geb. u. Gyn., xxv., 2, p. 164.

In one of Kleinwächter's cases a tumor in a woman 70 years of age, which had existed many years, underwent cancerous degeneration. Martin has recorded a similar case, and so have Paget, Simpson, Tait, Schröder, Finlay, and Byford. These tumors, therefore, are not as benign in all cases as has been taught, and their life history may be one of continuous growth which does not cease with the menopause.

What should be the treatment of such growths? In reply I would say it may be palliative, semi-radical, or thoroughly radical. No cases which give rise to symptoms should go untreated. Or perhaps the broader rule is warrantable: no cases of tumor uteri should go untreated, for the absence of symptoms referable to the tumor does not signify that symptoms will not come, perhaps in great severity. The palliative treatment is chiefly appropriate for those who refuse to entertain the proposition of surgical measures of relief, and also as a means of preparation for operative procedures. Great relief to the hemorrhage, pain, and discomfort is often obtained by such treatment, but the fact and the consciousness of the presence of the tumor in the body will serve as a constant menace to the patient, horrible as a nightmare, and its growth and enlargement will usually continue, even though there may be interruptions to its activity.

First among the palliative measures of treatment is galvanism. I will not enter into the details respecting its use, as there is an abundant literature upon the subject. I have used it frequently, but never with the method of puncture of the tumor, which I think inadvisable and unsafe. I have almost always found that it would relieve pain and hemorrhage, but never that it caused any reduction in the size of the tumor. In some cases the symptoms recurred and the tumor was removed; in others the ultimate result was not known, as the patients disappeared from my observation. That prompt relief to urgent symptoms so often accompanies its use is good reason why such thoughtful men as Sir Spencer Wells and the Keiths should be favorably impressed with the method, and it is to be regretted that its results are not more uniform and permanent. That much harm may arise from its use and militate against successful surgical treatment is a fact which does not need confirmation from those who are hostile to it; unprejudiced observers, and others who are its advocates, can testify to the correctness of this statement. It is not fair or just to a

¹ See Snow, "On Cancer and the Cancer Process," p. 144.

woman with a tumor to continue electrical treatment year after year without any improvement in her condition, if any radical treatment is available which does not expose her to dangers of too grave a character. The time has come when we can speak with considerable definiteness concerning the result of operations upon the majority of uterine tumors which are brought to our notice. Palliative treatment with ergot, hydrastis, and various other astringent drugs has already been commented upon, and their advantages and disadvantages noted. Treatment by dieting does not seem to me altogether a rational one, for it would be difficult to adopt any method of this character which would impair the nutrition of the tumor without impairing the nutrition of the entire body at the same time. Kleinwächter observed that after severe and wasting illnesses the dimensions of uterine myomata were diminished, but with returning health increase in the dimensions was also noticed. Curettage of the endometrium is frequently performed as a palliative measure, and it may check excessive flowing and secretion for a time, but as the endometrium is renewed and the growth of the tumor continues the bad symptoms will return. Consequently all these measures must be regarded as only temporizing or palliative ones. If a cure occasionally takes place it must be regarded as exceptional, and it must not be forgotten that much valuable time and vitality are often lost by such experiments. This fact is becoming more and more appreciated with increased knowledge and experience.

Semi-radical or tentative measures include those operative procedures in which an abdominal section is performed, the object being to cut off the sources of nutrition of the uterus and induce the climacteric. The operation necessitates the removal of the ovaries and tubes, or the ligation of the uterine and ovarian arteries, or a combination of the two procedures. The disadvantages of the operation are that the hemorrhage for which it was performed is not always checked and the growth of the tumor is not always stopped, even when all the arteries of direct supply have been tied. The collateral circulation may be so extensive, and the supply from the vessels in adhesions which may have formed so abundant, that the nutrition of both uterus and tumor may not be greatly impaired.

The cases in which this operation is indicated and is likely to be successful are: (1) those in which there is obstinate dysmenor-

rhea, due to the presence of one or more subperitoneal tumors not clearly pediculated and not exceeding two or three inches in diameter; (2) those in which there is slight myomatous enlargement of the entire uterus, with pain and profuse hemorrhage, the uterus not exceeding four or five inches in length; (3) those in which the tumor is so massive and its attachments so firm that removal would be extra-hazardous; (4) those in which the vitality of the patient is at such a low ebb that the shock of complete extirpation could not be borne.

Operations in classes 3 and 4 of this category may be regarded as preliminary to more radical operations if the conditions ever become sufficiently favorable. In classes 1 and 2 the experience of operators in general is highly satisfactory. With the exception of prolonged symptoms peculiar to the menopause, the occasional development of uncomfortable obesity, and the regret of hopeless sterility, I have observed only the happiest results from such operations. The uterus and tumors undergo atrophy in the course of a year, and even the external genitals experience the same retrogressive changes as those which occur when the menopause comes naturally. One's opinions in matters of this character are apt to be formed by personal experience, and the fact that uniformly good results have not been obtained by all operators would not prejudice me against the correctness of the indications for operation as here delineated.

Radical measures of treatment consist either in the removal of the myoma or the removal of the tumor with the uterus and appendages. There are cases in which the former may be done with entire satisfaction and with a minimum of danger from the operation, excluding almost all cases which have heretofore been treated by Schröder's method of enucleation. The objections to this operation, as already stated, are its greater risks, greater technical difficulties, and the fact that other tumors may subsequently develop. Those which can be easily removed are the subperitoneal ones of small size, not usually exceeding three or four inches in diameter, with a slender pedicle which can be removed close to the uterus without impairing the structure of the organ, and without leaving an extensive area of tissue denuded of its natural covering and exposed to the dangerous complications of sepsis. If the edges of the divided peritoneum are closed over the uterine wound, the vessels of the tumor having been securely ligated, no bad results in that direction should be experienced.

Excluding the forms of myoma which have been described, the treatment for the other forms should consist in the removal of the uterus, with the tumor, through an abdominal incision. This category will include the greater number of cases of myomata, fibromyomata, and fibrocystic tumors of the uterus. It will include those mural growths which are not readily enucleable through the dilated os uteri; a certain number of the submucous polypi which are imperfectly pediculated, and especially those in which a gangrenous process exists; myomatous uteri exceeding four or five inches in length, in which growth is observed to be progressive and pain and hemorrhage very troublesome; and the subperitoneal growths, large and small, not operable by extirpation of the tumor alone, as I have attempted to describe in the foregoing. The removal of the myomatous uterus has furnished one of the most important and difficult problems in the entire range of abdominal surgery. It was not the demonstration that the uterus was an organ entirely unessential to good health and longevity which required elucidation, and which might have been inferred from the changes which take place in the organ after the menopause, but the way to get it out of the body without such an exhibition of violence as would result in death from shock, from uncontrollable hemorrhage, or from subsequent septic absorption.

The treatment of the pedicle after the amputation of the uterus and tumor has long been the most intricate part of the subject, baffling all attempts at successful solution on the part of many of the ablest gynecologists who have ever lived. It seemed logical that the intraperitoneal treatment of the pedicle, which had been so unqualifiedly successful in ovariotomy, should be equally so in hysterectomy; but attempts in that direction were repeatedly unsuccessful or lacked the ideal success which was desired, the condition which continually eluded satisfactory treatment being the inability to keep the stump and its surroundings aseptic. The extra-abdominal treatment of the pedicle practised by Keith, Koeberlé, Péan, Bantock, and many others had the advantage of keeping the dangerous elements within reach, usually enabled one to avert sepsis and hemorrhage, and in most cases offered no serious technical difficulties. But it is a clumsy procedure at best; causes an unsightly depression of the abdomen; involves constant and often painful traction on the abdominal tissues, with possible dangerous hernia should the tissues yield; is a constant menace to the freedom of motion of the intestines; and is only the exchange of a great evil for a lesser one. Far more desirable and far more satisfactory is the operation which was foreshadowed many years ago by Trask in his classical work on rupture of the uterus, in which he advised the amputation of the organ at the level of the os internum if extensive rupture occurred during parturition, the stump to be covered with flaps of peritoneum carefully stitched together. This operation has been elaborated and recommended for the treatment of myoma uteri by Chrobak in Germany, Dudley, Goffe, and Baer in this country. The operation is in many respects an excellent one, the chief objection that could be urged against it being that it is incomplete. The vaginal portion of the cervix, which is retained to give firmness to the pelvie roof, does not seem to be required for that purpose, as can be proved in hundreds of cases in which vaginal hysterectomy for cancer has been performed; moreover, its nutrition being cut off by the ligation of the uterine arteries, it may atrophy, or even come away entirely, as in a number of reported cases. Another objection to this method consists in the possibility that decomposing material may be retained in the fossa between the peritoneum and the vagina, and give rise to septic phenomena.1

There remains to be described the method of complete removal of the uterus, which is practically identical with the method described by Freund in 1879 for the removal of the uterus for cancer. Freund's operation was abandoned because of its great technical difficulty, but with the improvements which have been made it would not be surprising if it again came into prominence, and even supplanted vaginal hysterectomy, with its difficulties and uncertainties, in the treatment of cancer. The improvement which has made Freund's operation not only feasible, but simple and rational, whether for cancer or myoma, is the Trendelenburg position. By its aid the structures which are to be removed can not only be felt but seen, and thus can be removed with greater safety and celerity than by any other method. The work of Eastman, Gordon, Polk, Krug, Edebohls, and others in bringing this operation before the profes-

¹ Dr. Tucker reported a case at the New York Obstetrical Society, May 2d, 1893, in which half a pint of pus accumulated in the supravaginal fossa, and was evacuated ten days after the operation for removal of the uterus.

sion, and detailing histories of cases which have been almost uniformly successful, is well known. The technique of the operation is usually simple, especially with tumors of moderate size, for which the operation is especially adapted. (I have had no experience with the operation in massive tumors weighing twenty pounds and upward, and do not know of any one who has. In such cases the technique will be more difficult than with smaller tumors.) It consists in clamping each broad ligament, as near the uterus as possible, with long and strong forceps, the appendages being excluded from their grip; releasing the tumor from adhesions; dissecting away the peritoneum from its anterior and posterior surfaces, beginning at the level of the os internum and dissecting downward until the space between vagina and peritoneal cavity is reached; ligating the upper portion of the broad ligament on one side so as to include the ovarian artery; cutting between this ligature and the clamp which is next to the uterus; ligating the uterine artery either separately or with the remaining portion of the broad ligament; cutting again between this ligature and the clamp forceps; repeating this process with the other broad ligament; separating the uterus from the vaginal attachment and removing it out of the body; ligating any bleeding vessels which may be in the cut edge of the vagina; passing the ends of the broad-ligament ligatures into the vagina as drains; passing a strip of iodoform gauze through the vaginal opening and disposing it in the supravaginal space so that there can be no pouching or pocketing of secretions; bringing together with continuous suture the flaps of peritoneum, and then closing the abdominal incision. These steps may be modified in various ways, but this is the plan which I have followed, and is essentially the one which is adopted by New York gynecologists who practise this method of hysterectomy. The degree of shock which accompanies this operation is much less, in all cases with which I am familiar, than might be expected. This is due in part to the Trendelenburg position, which tends to avert cerebral anemia and its consequences, and in part to the diminution in the time required for the performance of the operation compared with its prototype, the original Freund. It suggests a comparison which was made by Schröder between women who had been subjected to Freund's operation and those who had undergone vaginal hysterectomy, the former suffering from profound shock from

which in many cases they did not rally, the latter appearing like those who had experienced a moderately severe labor with rather more than the usual loss of blood. If the tumor were very large the element of shock will necessarily be considerable, whatever method be adopted in removing it, whether it be removed rapidly or slowly. The disastrous effects in such cases are not due merely to the sudden diminution of pressure by the removal of a large mass of material; in fact, in most cases no serious result need be feared from such a cause, especially if the place of the tumor be quickly filled by a sufficient quantity of dilute solution of sodium chloride at a proper temperature. The bad effects are due to the staggering blow which is inflicted upon the heart, brain, and lungs in the removal of the great volume of blood and other fluids which the tumor contains. I very much question the utility of removing enormous myomata and sarcomata from weak, enfeebled, and practically moribund women, their stock of vitality being too small for reaction. Little is said about such cases by those who are in the habit of publishing tables of their statistics. The conditions for drainage by this method are most favorable. With the broad ligaments and their ligatures turned into the vagina, and with a sufficient quantity of sterilized gauze in the vagina and supravaginal space to carry off secretions, there should be no septic complications; it is essentially an open method of treatment. With the peritoneal wound closed intestinal adhesions and obstruction are very unusual. The gauze may be gradually withdrawn, a few inches being pulled down and cut off each day until all has been removed. There is little more to be said concerning the treatment of such cases during the period of convalescence. The bowels must be kept freely open from the beginning, a bitter tonic must be given if the return to health is slow, and I prefer to use antiseptic vaginal douches daily after the gauze has been removed. The ligatures may not come away for weeks, but that is a matter of no consequence. I have never seen a case in which the pelvic roof did not become as firm as could be desired, or the vagina present any unusual conformation which would interfere in any way with its functional purposes.1 It may very properly be asked in these days, when many hysterectomies are being performed, Is the justification

¹ Dr. Polk informs me that he has removed the uterus by this method forty-two times, with but two deaths, at the date of reading this paper.

for the removal of so important an organ as the uterus, as an every-day operation, sufficient? I reply, in most cases the justification is ample. The organ is not essential to life, and, in the greater number of cases in which its removal is determined upon, is entirely inadequate to the function of gestation. If it can be removed with comparatively little danger to life, and its presence is a constant menace to health and comfort, what is to be gained by its retention? The question of mutilation has not the serious significance which it had a few years ago. If the uterus is removed the appendages should be removed also, which means the rapid induction of the menopause, relief to constant suffering, and the ability to assume anew a proper share in the duties of life without the sense of weariness and distress which the presence of the tumor made inevitable. Unfavorable mental influence as a sequel to this operation I have never seen, and can conceive of no reason why the mind should be influenced unfavorably by it any more than by the natural occurrence of the menopause. Of course in exceptional cases mental injury is possible. The influence of the operation upon the sexual appetite is likely to be governed by the temperament and previous history of the individual, just as is the case if the ovaries and tubes alone have been removed. Sexual desire does not reside in the genital organs; it is often intense when they are inactive, it may be intense if they are absent. It would seem accordant with physiological law, however, that the removal of organs associated with certain functions should gradually be followed by the abolition of those functions and the phenomena associated with them, and it would be unreasonable to expect that the genital apparatus would prove an exception. To those with whom sexual desire has long been absent, or has been overshadowed by the excess of suffering which has accompanied the development of the tumor, it is improbable that it will be restored by any surgical measures of whatever character. In the near future I believe we shall more frequently resort to radical measures in the treatment of myoma than is now deemed advisable, and, as in the case of ovarian tumors, we will not wait until the patient has been reduced to extremities by pain and hemorrhage or by such extensive growth that an operation will offer unusual difficulties.

¹⁵⁹ East 37th street.

LIGATION OF THE BROAD LIGAMENTS OF THE UTERUS FOR UTERINE FIBROIDS.¹

REPORT OF MY SIXTH CASE.

BY

FRANKLIN H. MARTIN, M.D., Chicago, Ill.

DECEMBER 16TH, 1892, I had the honor of presenting to this Society a description of a new operation for the treatment of fibroids and hemorrhage of the uterus.

The operation consists in the ligation from the vagina of more or less of the broad ligaments of the uterus with their vessels and nerves, the extent of the ligation depending upon the result sought, from a simple ligation of the base of the ligament, including the uterine arteries and branches of both sides, without opening the peritoneum, to a complete ligation of the ligament of one side, including both uterine and ovarian arteries, with partial ligation of the opposite ligament, without opening the peritoneal cavity if possible, but by doing so if necessary.

When that report was made ² I recited two cases, the first of which was operated upon November 15th, 1892. At that time I could do but little more than describe the operation and give the immediate results.

At the Milwaukee meeting of the American Medical Association, held in June, I reported in detail five cases, including the first cases operated upon. In that report the result of Case I. was given in the following words: "Tumor not materially affected; hemorrhages ceased temporarily." "Subsequent reports show hemorrhage increasing again. The patient thinks that the tumor has increased somewhat. I have not had an opportunity to examine the patient for several months. On the whole, the hemorrhage is less than formerly and the tumor not materially increased, although the operation cannot be said to be a success." Since the above report I have received more

¹ Read before the Chicago Gynecological Society, November 17th, 1893.

² The American Journal of Obstetrics, April, 1893.

³ Journal of the American Medical Association, September 2d, 1893.

gratifying news. The patient is markedly improved in every way. The tumor has materially diminished in size, there is no longer excessive hemorrhage, the pressure symptoms have subsided, and the woman pronounces herself in better health than she has enjoyed for years. Subsequently I received a letter from the physician into whose hands she fell after leaving me, and he informs me that immediately after her operation she had a severe attack of la grippe, which was prevailing in the locality at the time, and which, he thinks, accounts for the poor condition immediately following her operation. At any rate, her condition is now much improved, and, judging from the history of my later cases, I believe she will completely recover. This case I reported a failure in my series of five; I now wish to transfer it to my improved list.

Case II. of the series concluded as follows: "I have seen this patient every month since the operation was performed (December 3d, 1892). The hemorrhage has ceased completely. There has been very scanty flow at the menstrual period; all pain has The uterus had materially diminished in size at the end of one month; at the end of three months it was but little larger than a normal uterus. The patient's health has improved, so that from a state of almost complete invalidism she was transformed into a comparatively strong and healthy woman. The improvement was progressive from the day of the operation." I can now say, after the lapse of a year from the date of the operation, that I have never seen a woman, in the deplorable state this woman was, do better following either a hysterectomy or a Battey-Tait operation. The tumor, which was interstitial before operation, was eight by five inches, riding above the brim of the pelvis.

Case III., the patient wrote, four months after the operation: The "flow is about one-third the time in duration and one-third the amount it was formerly; otherwise not improved." This was a small bleeding interstitial fibroid, and on account of its smallness I ligated the broad ligament of but one side. The patient has not reported for a month.

Case IV.—large, adherent fibromyoma extending to the umbilicus, profusely hemorrhagic, for which laparatomy had been unsuccessfully performed, neither the appendages nor the tumor being removable—was the next case upon which I operated. The patient had not been out of bed, on account of loss of blood

and general weakness, for several months. With considerable difficulty I ligated the base of both broad ligaments, including the uterine arteries, January 5th, 1893.

In my June report I said of this case: "The flowing ceased immediately and the patient was relieved of her drain for over two weeks. She then had a few days' flowing, which resembled an ordinary menstruation. She has rapidly and steadily improved since that time. She has menstruated regularly but scantily, and without pain. She can at this time (June, 1893), five months after the operation, attend to her duties as a housewife, and considers herself cured. The tumor has become reduced in size until it is no longer noticeable as a deformity, and so that the patient herself is no longer conscious of its presence." Since the foregoing report was written in June I have seen this patient several times, the last time within the month. The patient was then examined by several physicians, one or two of whom, on independent examinations, failed to notice any abnormal enlargement. The uterus is still somewhat larger than normal, but is not more than three by four inches in diameter, while the testimony of at least three experienced diagnosticians will bear me out in the estimate that its former diameters were not less than four and a half by eight inches. The patient is in good health now; menstruation is regular but scanty, and she is free from pain.

Case V. was one referred to me by Dr. F. H. Geer: "There had been constant hemorrhage for three months; diagnosis, interstitial fibroid tumor about size of a four months' pregnancy. I operated on patient January 8th, 1893. She had a little subsequent temperature, and one month after operation the ligature sloughed from left broad ligament, from becoming infected from the vagina. Four months after operation Dr. Geer reported that the menstruation only lasted two days; very scanty, no pain. Fibroid diminished in size until the uterus is about normal. Patient claims that she is cured." This is the June report; I have no subsequent one.

Case VI.—The case which I wish to make a preliminary report upon to-night has been of extreme interest to me, because the patient was the wife of a well-known physician and a specialist of national reputation, who a short time since was obliged to leave this climate on account of lung trouble and seek relief in the milder climate of California. In the latter part of July last,

while on his way to Philadelphia for the purpose of having a radical operation performed on his wife—either removal of appendages or hysterectomy for hemorrhagic fibroid—and resting here a few days en route, he accidentally came upon an abstract, in one of the medical journals, of my paper read before the Milwaukee meeting. It seems to have appealed immediately to his pathological and surgical sense as an operation which, while it could not possibly do his wife any harm, might be the means of at least temporarily relieving her of the exhaustive blood loss, and, too, gave room for hope, based on what he considered rational grounds, although the fact was undemonstrated, that permanent improvement and ultimate recovery might ensue.

The next day I was consulted. The patient was a woman of about 36 years of age, slightly above the average height, with well-proportioned frame, but poor in flesh, with a skin blanched and a body almost exsanguinated. The uterus was about the size of a three or four months' gravid uterus. The tumor was uniform and evidently interstitial. The uterus was in normal position. The cervix was nearly two inches in diameter, the os patulous.

The history of the growth dated back, undoubtedly, several years. The patient had borne no children. The menstruation had for nearly two years increased in quantity and duration, until now, while coming with absolute regularity, it lasted fifteen days, and that in spite of vaginal and uterine tampons, the recumbent position, ergot, hydrastis, and the rest. She flowed each month until she was completely exhausted, scarcely recovering in the next thirteen days, so that she could not assume the upright position without fainting. Accompanying this unusual discharge was uterine pain which in its severity brought the patient to the point of unconsciousness. During the four days in which the woman could drag herself around in the latter part of each intermenstrual period, she did so with the greatest discomfort on account of the severe pressure and neuralgic pains of the pelvis. Upon examination of the broad ligaments from the vagina the finger could detect on either side the large, pulsating uterine artery as it fed the tumor. The latter was movable, the appendages apparently normal, the broad ligaments accessible. In fine, here was an ideally typical case—a hemorrhagic fibroid of the uterus, a bed-ridden patient, an authentic diagnosis, an unusually interested physician to carefully watch and estimate the result, and one who enthusiastically demanded

a trial of the new operation. Under the circumstances it seemed to me that much depended upon this case, as though the fate of this operation must necessarily be more than usually linked with this particular patient.

Operation.—The patient was prepared for operation in the same careful manner as patients are who are to have vaginal hysterectomy. August 2d, at the Chicago Hospital, assisted by Dr. Oakshett and Dr. Robert Dodds, I ligated the base of both broad ligaments. After placing the patient in the exaggerated lithotomy position, exposing the cervix with two broad retractors, transfixing the cervix with a strong handling ligature, I incised the vaginal mucous membrane at about three-quarters of an inch from the cervix, right and left of it, at right angles to the broad ligaments, with a wound about one and a half inches in length, representing about a quarter of an imaginary circle surrounding the cervix at a distance of three-quarters of an inch. Through the left incision, with the finger, the contents of the left broad ligament was carefully dissected from its peritoneal covering behind, and from the bladder in front, until fully two-thirds of it could be grasped by placing one finger behind it and another finger or instrument in front of it. When grasped in this manner several beating branches of the uterine artery, together with the main artery itself, could be detected. This entire mass was then ligated in two sections with No. 12 braided silk, the silk cut short, the parts irrigated, and the vaginal wound closed with catgut. After treating the opposite side in the same manner, the vagina was cleansed and loosely packed with iodoform gauze. When the operation was finished the throbbing arteries, which could be distinctly felt before, could no longer be found. cervix, which was large and purple previous to the operation, became pale and cartilaginous in appearance as soon as the broad ligaments were secured.

The patient remained in the hospital three weeks. The first menstruation was due the day following the operation. It began the next morning, but was so slight and painless that the patient would not believe that it was her menstruation until several days had elapsed and no other flow appeared. It lasted about three days and was barely perceptible; absolutely no pain. The after-treatment consisted in vaginal douches after removing the gauze, light diet, and the recumbent position for two weeks. The patient went from the hospital to Lake Geneva,

Wis. August 30th the second menstruation appeared; there was a little of the old pain, but not sufficient to require anodyne of any kind; the flow was half the usual amount and lasted six days. September 28th the third menstruation appeared; the amount was normal in quantity, lasting but four days; the pain was slight. October 26th the fourth menstruation appeared; the amount normal in quantity, lasting but four days; the pain was slight. The patient was seen and examined by me just before the last menstruation. She had gained several pounds in flesh, her cheeks and lips were red, and she was a picture of health and robustness. Her feelings were in accord with her appearance, as she enthusiastically assured me that she felt perfectly well. On examination I found the uterus was reduced in size. It was little, if any, larger than normal. Its bulk had decreased one-half. The cervix was small and normal. No arterial pulsation could be felt in either broad ligament or around the vault of the vagina.

The husband of this patient, who complimented me by believing so implicitly in my operation, said just before returning to Los Angeles: "I was certain from the first that it was bound to be successful, and the result has already exceeded my fondest anticipations."

A METHOD OF PERFORMING RAPID MANUAL DILATATION OF THE OS UTERI, AND ITS ADVANTAGES IN THE TREATMENT OF PLACENTA PREVIA.¹

BY

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(With ten illustrations.)

I wish to engage your attention with the description of a manual method of effecting rapid and very extensive dilatation of the os uteri for parturient purposes. So far as I am aware, the method I shall endeavor to illustrate has not been described or practised by others. I have asked a number of professional friends to explain or exemplify their conceptions of manual

¹ Read before the Section on Obstetrics, Pan-American Medical Congress.

dilatation of the os in parturition. From none of them have I obtained the slightest reference to my method or any part of it. The forcible introduction of the conated hand, or the separation of introduced fingers, about covers all that I have learned from my friends or from obstetrical writers.

The employment of rapid manual dilatation must be restricted to cases of advanced pregnancy where, for any reason, it is desired to effect prompt delivery. Its use presupposes the possibility of the full introduction of the index finger to its largest diameter without much delay or difficulty. If, with the patient anesthetized, the index finger cannot in a very few minutes be fully introduced, I should seriously doubt the possibility of a successful employment of this or any other manual method of dilatation, and should advise the operator, for the time at least, to cease further attempt.

My experience with the method of manual dilatation about to be described is derived from its employment in seven cases of placenta previa, six cases of crossed birth, and two of eclampsia. In six instances, all of which were placenta previa, there had been no labor pains, although a hemorrhage had in each instance preceded the employment of manual dilatation and consequent delivery of child. It is possible that the very hemorrhage which prompted me to effect immediate delivery was in itself an aiding factor in its speedy accomplishment.

An extensive obstetrical experience convinces me that while the previous occurrence of hemorrhage and the particular location of the placenta may have made dilatation more easily possible, its influence in that relation was far from being a considerable one, and I am consequently left with the conviction that, after all, the undilated, unlabored os of normal pregnancy may not prove very much more obdurate and unyielding than the undilated, unlabored os of placenta previa. If a woman at or after the seventh month of utero-gestation (not in labor) be anesthetized with ether or chloroform, I believe it will often be found an easy task to insert the index finger to its largest diameter, the hand having followed in the vagina. If the finger now be withdrawn, so that its tip merely enters the os, it will usually be found possible to introduce alongside the tip of the thumb. When the tips of both index finger and thumb are thus within the ring, and the second finger sharply flexed, with the os resting on its palmar and inner latero-dorsal aspect, we have

but to keep the index and second fingers close together to form a notch, from which the os-uterine ring cannot easily escape. For purposes of description and reference I will call this the first position for manual—or what might perhaps be more correctly termed digital—dilatation. The straightened and extended thumb, resting on the outer lateral side of the index finger, is now carried as far from the tip of the index finger as the enlargement of the os will permit. Considerable power for dilatation may indeed be exerted by continuing this movement of the thumb, but a much greater and far less fatiguing force may be exerted if we implant and immovably hold the thumb on the index finger whilst forcibly and together flexing the index and





Fig. 1

Fig. 2.

Fig. 1.—Position of fingers in the beginning of manual or digital dilatation of the cervix uteri—first position.

Fig. 2.—Showing the limit of dilatation in the first position.

second fingers. When a little headway has been thus gained, we slightly extend the index and second fingers, which will permit the extended thumb to travel further from the tip of the index finger, at which point we again press and hold the extended thumb firmly against the outer side of the index finger. In this position the holding point is again taken, whilst tonic flexion of the index and second fingers continues the work of dilatation.

After a while the fingers are again slightly extended, which will permit the thumb to be carried still further toward the metacarpo-phalangeal articulation. Whilst holding it firmly on

the index finger, flexion of the index and second fingers should be renewed. If tonic flexion of the fingers has been steadily maintained we shall now be able to introduce the index and second fingers and thumb. This I will term the second position. The relation of the extended thumb to the first finger is maintained as in the first position, whilst the os, encircling the thumb and also the two fingers, rests upon the dorsal surface of the more sharply flexed third finger, in the same manner as it rested on the second finger in the first position. The power for stretching, too, is derived from fixation of thumb on first finger, whilst counter-pressure is effected by flexing the index, second, and third fingers in the manner described for the first.





Fig. 4.

Fig. 3.

Fig. 3.—Second position. Fig. 4.—Showing the limit of dilatation in the second position.

position. In a short time we shall have dilated sufficiently to permit the introduction of the third finger, which will constitute the third position. The os, still hooked over the tip of the extended thumb, will now have its point of counter-pressure between the third finger and the inner latero-dorsal aspect of the fourth finger. Again we resort to tonic flexion of all the fingers, and take up the gain by occasional slight extension of the fingers and movement of the extended thumb toward the metacarpo-phalangeal articulation. We shall soon be ready for the introduction of the thumb and all the fingers, thus entering the fourth position. Here again the enlargement is effected by

flexion of all the fingers, although the index and second will be flexed far less than the third and fourth fingers.

The limit of dilatation in the fourth position for a hand measuring seven and three-quarter inches over the metacarpophalangeal articulation (as measured for gloves) is eight and a half inches (circumferential measurement).

The extreme limit of possible and easy dilatation in the fourth position will not exceed the glove measurement more than one inch, which is scarcely sufficient for the easy introduction of the whole hand. I then resort to the fifth position, in which the os is made to encircle the first row of phalangeal bones of the fingers and the second or last phalanx of the thumb.





Fig. 6. Fig. 5.-Third position. Fig. 6.-Limit of dilatation in the third position.

The movement required in this position is extension of the thumb and all the fingers, the tips of the fingers being at the same time flexed to lessen their encroachment on the intrauterine space. A less fatiguing and somewhat more powerful dilating manipulation is the sixth and last position, which is effected by causing the os to encircle the second row of phalangeal bones of the fingers and the first phalanx of the thumb.

In either the fifth or sixth position the degree of circumferential dilatation possible will exceed the glove measurement by at least three inches. This, of course, is a much greater enlargement than is required for the introduction of the hands into the uterus.

When the tips of first finger and thumb are in the first position for dilatation, the very slightly enlarged os will feel like an inelastic ring, and the tissues composing it will approximate in size the coil of wire which I have formed into the ring with which I illustrate the positions and movements in each position.

During all of these manipulatory movements of the thumb and fingers the hand reposes in the vagina, and so quietly, indeed, that, if the work is properly performed, bystanders will scarcely observe any appreciable movement of the wrist at the vulva. There is neither call for dragging down, nor pushing upward of the os; it is dilated *in situ*, whilst the encroachment on the intra-uterine space, as you may have observed, is reduced to a





Fig. 7.—Fourth position.
Fig. 8.—Limit of dilatation in the fourth position.

minimum by flexure of the tips of the fingers in all the stages of every position. Any normal hand should endure the fatigue consequent on the accomplishment of rapid dilatation, if dilatation is possible. Having once failed to accomplish rapid dilatation, probably owing to my inability to easily and fully introduce the first finger, I desire to again remind you that in any such case it may not be possible to effect dilatation by this method.

Eleven years ago the late Dr. James C. Amiraux asked me to hasten to his aid, stating in his note that he was in attendance upon a case of placenta previa, and that he greatly feared the

¹ The diameter of the coil forming the ring was about half an inch.

patient would die of hemorrhage. When I reached the patient's house the doctor informed me that the woman had been seized the day before with hemorrhage, for which he had already twice tamponed her, permitting the second tampon to remain until my arrival. Upon its removal we found the vertex and a margin of the placenta presenting through a well-dilated os; the patient was almost pulseless, complained of thirst, and was so generally weak that we momentarily feared her death. The forceps was applied and the very rapid delivery of a living child effected, after which the liberal use of brandy and hot applications accomplished an improvement in our patient's condition which eventuated in recovery.



Fig. 9 -Fifth position.

Fig. 10.-Sixth position.

This was my first experience with placenta previa. Previous to that I had discovered the ease with which the gravid uterus at or near term could be manually dilated under anesthesia in the manner described, and I then resolved to try manual dilatation in place of the tampon, should I at any time meet with the undilated os of placenta previa. I had not long to wait, for just one year later I was called to see

CASE II., a primipara, English, et. 24. Upon retiring at night, and without pains of any kind, she was taken with a most profuse flooding. I reached her house about one hour after its occurrence. She was still rapidly flowing; there were no pains; the os admitted the index finger. With the assistance of Dr Amiraux I anesthetized the patient, and at once began manual

dilatation of the os. In twenty-one minutes my hand entered the uterus, a foot was brought down, and in twenty-eight minutes more, or in forty-nine minutes from the beginning of dilatation, a still-born child and placenta came together. The woman recovered without fever or embarrassment of any kind.

Case III.—Mrs. S., IIIpara, at. 30, had a slight hemorrhage at the seventh month, for which, I think, no medical advice was obtained. At the eighth month a very profuse flowing occurred, but no pains. The os readily admitted the index finger, which revealed placenta previa. Dr. James W. Smith confirmed my diagnosis, and, after he had administered ether, I manually dilated the os and introduced my hand in twenty minutes. The membranes were ruptured, one foot brought down, and the child and placenta were delivered in forty-five minutes from the beginning of dilatation. The child was still-born. The mother recovered, although not without a degree of puerperal fever, which was probably due to our inability to overcome the dangers of the unsanitary surroundings.

Case IV.—Mrs. S. (the same woman as Case 3) two years later sent for me at midnight. She had been sleeping about two hours and was awakened by a pool of blood in her bed. Utero-gestation had probably advanced to seven and a half months. I saw her within an hour from the time she awakened. No labor pains had been experienced; the os rather tardily admitted the index finger. In a very short time Drs. James W. Smith and Millspaugh were kindly with me. The patient was etherized, and manual dilatation effected sufficient enlargement of the os to admit the hand in sixteen minutes. In twenty-four minutes more a still-born child and the placenta were delivered. The patient made a rapid and uneventful recovery.

Case V.—Mrs. C., IVpara, et. 30, was taken at the eighth month with a rather profuse flowing. I saw her six hours later at the request of her physician, Dr. Edward W. Doty, who informed me of the presence of placenta previa, and also assured me that the os would scarcely admit one finger. She had had no pains. Upon my assurance that delivery could be at once effected, ether was procured, the patient anesthetized, and manual dilatation begun. The hand entered the uterus in twenty-two minutes, one foot was brought down, and a living child (which still lives) and the placenta were delivered in

twenty-two minutes more. The mother's convalescence was normal and complete.

Case VI.—German, IVpara, æt. 30, was taken with slight labor pains, which in six hours were attended with quite a profuse hemorrhage. When Dr. D. T. Bowden was called I went to the doctor's assistance, six hours after his first visit, and confirmed his diagnosis of placenta previa. There were only occasional pains, the hemorrhage continued, and the os would scarcely admit two fingers. I assured the doctor of my ability to quickly enlarge the os. With his consent the patient was anesthetized and manual dilatation begun. In twenty minutes my hand entered the uterus, ruptured the membranes, and brought down one foot. In twenty-five minutes more she was delivered of a still-born child and the placenta. No hemorrhage followed, and convalescence was normal.

Case VII.—German, VIpara, æt. 43, at eight and a half months of utero-gestation was taken with rather profuse and continuous flooding. The house was so cold and unsanitary that I at once removed patient to the Paterson General Hospital. On the way and after entering the hospital she had a few very slight pains and a great deal of flowing. The os was dilated sufficiently to almost admit two fingers. With the aid of house physicians Drs. McCoy and Fuentes, who anesthetized the patient, I made manual dilatation of the os. In eighteen minutes my hand entered the uterus, ruptured the membranes, and brought down one foot. In thirty-two minutes more a stillborn child and the placenta were delivered. The patient recovered without fever or embarrassment.

Case VIII.—German, Vpara, æt. 34, was seized with hemorrhage at eight and a half months. The flowing was free and continuous and not accompanied by labor pains. This case was seen at the request of and with Dr. William Flitcroft, and was also, for sanitary reasons, removed to the Paterson General Hospital. She reached the hospital about six hours after the occurrence of hemorrhage, complaining of pain in her back, but did not seem to have any regular labor pains. She was still bleeding and the os admitted three fingers. After a brief consultation with Dr. William K. Newton, my alternate in the obstetrical service at this hospital, the patient was anesthetized and he completed the work of dilatation with conated hand, introduced hand, brought down one foot, and delivered a living child and

the placenta in about twenty-five minutes from the time of dilatation. The patient was discharged from the hospital in about two weeks.

Case IX.—German, IIIpara, et. 36. Seen with Dr. B. C. Magennis about three hours after the occurrence of hemorrhage. The os admitted but the tip of the index finger. Not having hitherto failed to effect rapid manual dilatation, I advised that we proceed at once to effect delivery. The patient was anesthetized, and at the end of fifty minutes I suffered the embarrassment of announcing my inability to introduce the tips of index finger and thumb. Hemorrhage had ceased, and I advised a delay of one week, unless the occurrence of hemorrhage or other important symptoms called for interference. Vaginal douches of boracic acid solution were given twice daily. On the second day following the unsuccessful attempt at delivery the patient was removed to a private room in the Paterson General Hospital. In just six days from the occurrence of the first flooding a second slight but continuous hemorrhage occurred. There were no labor pains. The os was now found to admit the tip of the finger with greater facility than at the time of the first hemorrhage. We introduced one of the smallest of Barnes' fiddle-shaped rubber bags and inflated with water by means of a piston syringe of known capacity. At the end of one hour it was emptied, removed, and replaced with one of the largest size. This was filled with water, and at the end of one hour the patient was anesthetized and removed to the operating room. Upon removal of the Barnes dilator the os admitted two fingers. Dr. Magennis began manual dilatation by my method. I concluded dilatation in twenty-two minutes from the removal of the Barnes dilator, introduced hand, ruptured membranes, brought down one foot, and effected the delivery of a still-born child and the placenta in fifty-five minutes from the time of beginning manual dilatation. The patient made a normal and uneventful recovery.

These nine cases cover my entire experience in the management of placenta previa. All of the mothers recovered and three of the children lived. In eight cases manual dilatation of the os was practised to the extent of admitting the hand and effecting podalic version. In only seven cases was my method of dilatation employed.

The shortest time required to dilate the os from the easy in-

sertion of index finger to introduction of hand was sixteen minutes. The longest time was twenty-two minutes.

The average time to dilate from one or two fingers to the whole hand, for the seven cases of this class, was nineteen and six-sevenths minutes.

The addition of the case operated by Dr. Newton, in which dilatation from *three* fingers to full hand was effected in fifteen minutes, will lessen somewhat the average time for dilatation in the eight cases.

The beginning of dilatation in Case 9 with Barnes' bags occupied two hours. This time does not figure in the above averages. I have little doubt that this case was ready for manual dilatation at the time of removing the smallest bag, or in one hour from its introduction.

The very short time required in any of the other cases to fully introduce the index finger or its equivalent, the tips of index finger and thumb, is included in the figures from which the averages are taken, so that in each of the cases of manual dilatation the time given begins at the first touch of patient and ends with the bringing-down of one foot.

The withdrawal of the anesthetic immediately after the performance of version usually enabled Nature to quickly complete the delivery with the aid of slight traction upon the foot or leg; for almost as soon as the anesthetic is withdrawn labor pains begin, and in a very short time they become both active and propulsive.

Now as to the time required for the completion of the second and third stages of labor. In the eight cases the placenta either came with, or so quickly followed the delivery of the head in each instance that the actual time of the so-called third stage was almost too short to admit of computation.

The shortest time required to complete labor, after beginning to turn, was ten minutes. The longest time was thirty-three minutes. The average time for the eight cases was twenty-five and one-eighth minutes.

The shortest time for dilatation of the os, the performance of version, and completion of delivery in any one case was twenty-five minutes. The longest time was fifty-five minutes.

The average time for the eight cases was forty-one minutes. All of the mothers recovered and two out of the eight children lived.

In five cases not a single labor pain occurred previous to rupture of membranes and the performance of version. The delivery was in each of these cases purely an elective operation. Two cases had a few very slight and unpronounced pains.

The remaining one of this class of eight cases had been in actual labor twelve or thirteen hours, with an almost continuous flow for seven hours. In every instance hemorrhage ceased or was brought under control by dragging down the foot after turning. There was not a single instance of post-partum hemorrhage to remind me of cervical laceration.

One would suppose that such rapid dilatation of the os would of necessity have brought on dangerous hemorrhage or very greatly increased the flow from placental detachment. It is interesting to note that the amount of blood lost during manual dilatation was in no case sufficient to cause special anxiety or alarm.

I wish again to remind you that this method of dilatation should be effected with comparatively little encroachment on the intra-uterine space, and, if properly performed, we shall limit the area of placental detachment, and consequently the hemorrhage, until the membranes have been ruptured and the leg brought down.

The extremely unsanitary surroundings of four houses and my inability to satisfactorily mend these made me gravely apprehensive of septicemia.

In one instance (Case 3) my fears were in a measure realized. I need scarcely say that surgical cleansing of the hands, vulva, and vagina before operation, and, in some cases, irrigation of vagina, and of uterus also, with sterilized water after delivery, was practised with as much care as circumstances would permit.

The very brilliant achievements of Richard Lomer, Hofmeier, and Behn in the management of placenta previa by the Braxton Hicks method of bimanual version would seem to leave no room for improvement. I have not pursued a somewhat different practice with the expectancy of affording better results than were obtained by these gentlemen. As a matter of fact, my first two cases were operated before the publication of the practical and masterly report of Richard Lomer in The American Journal of Obstetrics. Stimulated with the satisfactory results in these two cases, I continued my practice without modi-

fication and with the very gratifying results here given. To some extent many others have no doubt, in one way or another, effected the introduction of the hand into the uterus in placenta previa, performed podalic version and consequently delivery.

Some—doubtless with knowledge of the Braxton Hicks method—have thus modified his treatment, but I am not aware that any one has induced labor and at the same time accomplished extensive dilatation of the os with such great rapidity nor with anything like the uniformity of result attained in the few cases here presented.

26 CHURCH STREET, PATERSON, N. J.

A PLEA FOR THE STUDY OF PEDIATRICS.1

BY

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There is no department of clinical medicine which is so immature to-day as the department of diseases of children. There is consequently no field of work in practical medicine so rich in possible results for earnest workers as this one. It has always been handicapped by superstitions and nursery legends, which cling to it like barnacles to a ship's sides and impede its progress. So long as all the ills of infancy are referred to teething as the great causative factor, and the troubles of childhood are satisfactorily explained by worms, so long may we expect stagnation in this important branch of our work.

Two years ago Dr. T. M. Rotch, of Boston, took as the keynote of his address as President of the American Pediatric Society, "Iconoclasm." He urged that all present ideas upon the diseases of children be held in abeyance and the subject approached without bias and with an attempt to study it from the ground up.

This idea of clearing the ground of useless lumber and leaving a clear road for advancement is much needed in pediatrics. The reasons for the very evident deficiencies of this branch of medicine are not difficult to trace.

¹ Read before the Chicago Gynecological Society, November 17th, 1893.

In the first place, the subject has been treated in a stepmotherly way by the medical colleges, and even such work of a scientific nature as has been done in it has not been presented to the students in a systematic manner. In but very few of the colleges of this country is there a chair of diseases of children. Usually the subject is tacked on to the chair of obstetrics or diseases of women, with either of which it is rather less intimately connected than with diseases of the eye. Some few schools have clinical professorships in this department, the very nature of which prevents a systematic presentation of the subject. Even in the Harvard Medical School, which is justly regarded as one of the best and most progressive colleges in the country, the head of this department has not, until this year, been honored with the title of full professor, although he is one of the ablest pediatricians of the world.

It must be acknowledged that internal medicine is taught almost universally from the standpoint of the adult, and pediatric manifestations of disease are only incidentally referred to. The consequence is that the new graduate is afraid of a baby, readily accepts the diagnosis of the grandmother, and not infrequently follows her treatment.

Another important factor in the retardation of the study of infantile disorders is the inherent difficulty of diagnosis. While the infant has not the power of speech, yet it does possess a very distinct and quite full language, the acquirement of which, however, demands faithful and persistent effort on the part of the practitioner. This language is quite as difficult to acquire as the manual skill needed in so many of the mechanical departments of the profession.

If children were little men and little women there would be but slight reason to devote special attention to their diseases. As a matter of fact they are not. The newly-born infant possesses organs so undeveloped that, in many instances, their functions can hardly be compared with the functions of adult organs at all. Notably is this true of the pancreas, stomach, and the bowels, but more particularly of the brain. The course of normal development of none of these organs has been determined with rigid exactness, and yet it is upon a knowledge of such development, and the morbid variations therefrom, that much of the practical work of pediatrics must be based.

In a certain general way a great deal is known of the normal

course of development, but much remains to be learned. Having determined the normal course of development, there yet remains to ascertain the influence of the various factors which determine it and cause it to proceed either normally or abnormally. These factors are hereditary and environmental. The study of the first class has received a great impetus from the rather recent work of Clouston on the "Neuroses of Development," while the latter class of factors is usually elaborated into such indefinite nothings as "good or bad surroundings," "good or bad food," etc. Such expressions are inexact, give no information, and, indeed, are but another way of stating the question.

The environmental factors concerned in the child's development may be grouped under three heads:

- 1. The nutritive factors.
- 2. The sanitary factors.
- 3. The psychic factors.

Of these the nutritive factors are the most important from the pediatrician's standpoint. At the same time they are the least understood. The reason for this is simple, and not discreditable to the medical profession. An accurate study of nutritional processes is only possible with the aid of an extensive knowledge of organic chemistry, and the necessary chemical knowledge is only now being put at our disposal. But such knowledge is now at our disposal. Chemistry is indeed far advanced for our purposes when it permits such a remarkable compilation as is given in Halliburton's "Chemical Physiology and Pathology," issued two years ago. Halliburton's book does not contain all that is known of medical chemistry, nor does it answer all the questions that the clinician may ask of the chemist, yet it gives such an excellent foundation that the clinician can no longer refer to the immature condition of a collateral science as his reason for failing to advance. Such a book will advance a progressive clinician; it will enable him to study anew certain clinical manifestations in the light of advanced knowledge; it will enable him to hew off something from the great block of empirical knowledge, rearrange it, and add it with increased power to the mass of classified, exact, scientific knowledge.

It is not within the province of this address to consider any of the details of the nutritive environmental factors, but rather

to discuss matters generally. Yet I cannot avoid a reference to the enormous mortality in early life which follows from improper feeding. The infant deprived of its natural nourishment not only runs the gauntlet of the diseases directly induced by its method of feeding, but is also exposed to many secondary dangers. Many of the neuroses of childhood find their foothold only in children whose tissues are depraved by reason of improper food. Many an hereditary defect is encouraged and developed by the method of feeding the child. Many a child fed entirely upon food purchased at the drugstore succumbs to trifling forms of infectious disease.

The sanitary environment of the child is, in our day, receiving attention because to a large extent it coincides with the sanitary environment of the adult. This limits the work largely to the infectious elements, the nutritional features being much neglected.

Since the beginning of civilization schools have existed for the development of the mind, but nowhere can we find that schools exist for the development of the body, or for teaching those who are charged with the development of the body—that is to say, parents. I cannot dignify with the name physical education the efforts at physical training which now exist. They are at best empirical, and, like all empiricism, often blundering. Athleticism, in the present conditions of our civilization, is abnormal and almost as much to be avoided as invalidism. Athletes die young because, as shown by Lydston, finding no constant employment for their excessive muscular development, the muscles gradually atrophy; but the important viscera, which have developed pari passu with the muscles, cannot undergo a corresponding involution and consequently degenerate, laying the foundations for subsequent disaster.

I have briefly referred to the fact that for ages schools have existed for the development of the mind. It is not, however, to be inferred that the methods of these schools are the best possible for their purposes. Educators have discussed very much the various systems and plans of education proposed, but it is only very recently—and it is a most encouraging sign of the times—that some scientific educators, with President G. Stanley Hall of Clark University at their head, have instituted a study of the natural history of the child—a study of the phases of its natural mental development. Such interesting conceits as the study of

the normal development of child lies may be mentioned to indicate at least something of the scope of the investigations now in progress. With these investigators the medical pediatricians must go hand-in-hand to afford an all-around study of the child.

I think it doubtless true that the study of the diseases of children has been somewhat retarded by a misconception of the meaning of the term pediatrics. Pediatrics, notwithstanding its etymology, includes not only the diseases of children, but all the conditions which modify and make peculiar these diseases. The anatomy and physiology of infancy and childhood are as much a part of pediatrics as is their pathology. The great peculiar features of pediatrics which distinguish it from all other departments of medicine are the elements of growth and development, as shown in their normal and abnormal manifestations. From this we may assert that the great function of the pediatrician is to make of a given child the strongest possible adult.

Instead of always studying the diseases of children from the standpoint of the adult, let the process be reversed awhile and let us study the diseases of the adult from the standpoint of the child. Much light will be obtained. Some diseases can never be clearly understood when studied in adults alone. Rheumatism is a singularly appropriate example. In the adult this disease is characterized mainly by its joint symptoms. So marked are these that they have dominated our conceptions of the disease. In fact, they led us to believe that rheumatism was rare in the child. More careful observation, however, has shown that it is very common in children. I have seen unmistakable cases at 4 months of age, and believe that I have seen it once in a child 3 days old. But in children the joint symptoms are not well marked. On the other hand, other symptoms, such as inflammations of the different serous sacs, and tonsillitis, are common and occur either subsequently to, coincidentally with, or even previous to, the joint symptoms. The same may be said of the symptom chorea, whose relations with rheumatism, while not yet certainly determined, are undoubtedly very close. Thus it is seen that typical rheumatism occurs only in the child, while the manifestation of the disease in the adult is altogether peculiar and special.

The diatheses are best studied in childhood, because, if acquired, it is there that they have begun, and, if hereditary, it is during that period, by neglect of the child's environment, that

they have been permitted to develop and become important pathological factors.

In the history of a boy of 15 dying of cerebro-spinal meningitis I have been enabled to trace, step by step, from his very infancy, the conditions which finally culminated in the fatal manifestation, but which might have been headed off if taken in hand early enough.

I have met altogether too often, in infants less than a month old, conditions which, if permitted to proceed unchecked, will almost certainly terminate in chronic Bright's disease, but which can be controlled by proper attention to the child's environment.

If we accept the broad conception that all real progress is racial and not individual, we must admit that one of the best ways to improve the race is to improve the individuals composing it.

It has been asserted that the cities would die out if not constantly recruited from the country, and that families moving from the country to the city rarely last more than four generations. If these facts mean anything, they mean that the environment to which people are subjected in the city is simply atrocious, for heredity cannot degenerate to the point of family extinction in the short space of four generations, except in the face of a most vicious environment.

Doubtless some of this vicions environment is unavoidable, but much of it may be prevented or rendered inoperative by the proper guidance of the children. Even if the exceptionally good physical environment of the country cannot be attained in its entirety in the city, its effects can to some extent, at least, be reached, and this is of the greatest importance to the race; for it is certainly necessary for the production of the best specimens of the race that the effects of the better physical environment of the country be combined with the more active and intellectual environment of the city. This is to be accomplished by counteracting as many as possible of the environmental evils of the city. Before, however, this can be done, the complex conditions of the environment must be analyzed and the real effects of each independent element on development and growth be rigorously determined.

Particularly do I believe it necessary to direct attention to the nutritive and developmental factors of infancy and childhood. The nutritive conditions of infancy and childhood, particularly

infancy, are exceedingly complex, including, for instance, an adjustment of diet to the stage of development of the child as a whole, and also with reference to the functional development of its various organs—a process which not infrequently makes necessary a reference to the conditions of the development of the fetus, and even, at times, to the course of development of the race. For a determination of some of these factors, therefore, a knowledge of embryology becomes necessary.

Those of us who practise in the city, more often, perhaps, than our more favored brethren in the country, have presented to us the necessity of doing something to strengthen and develop the children, who are soon to assume charge of affairs and become the parents of the next generation. And in our dilemma we see clearly that the matter must be approached by a systematic study of pediatrics.

But how shall a thorough study of pediatrics be encouraged in our medical schools? When most of our schools do not even recognize the subject sufficiently to have even a chair of diseases of children, it seems almost hopeless to expect to extend their teaching to a systematic presentation of pediatrics. And yet it must come.

In the first place, every reputable medical school should appoint a full professor of pediatries. This professor should include in his lecture and clinics not only a discussion of the diseases of children, but, so far as time will permit, he should impress upon his class the wide scope of the subject and elicit an interest in its development. He should use his influence with the faculty to establish in the school a study of the fundamental branches upon which his own is dependent. Thus in anatomy he should secure the dissection of infants and the study of embryology in a properly equipped laboratory. In physiology and chemistry he should secure laboratory work on the chemistry of food stuffs, the processes of digestion, assimilation, and elimination. In pathology the morbid anatomy and bacteriology of early life should receive formal attention.

But if it be urged that this work is too much to put on the already overburdened medical student, then part of it must be made elective work, to be taken by those who are especially interested in the subject. In the absence of some such provision the work will certainly be taken up by some of the post-graduate

schools, which are already attempting to supply deficiencies in under-graduate teaching.

I plead for a more thorough study of pediatrics, for the great light which it will shed upon the diseases of adults, for the better alleviation of the sufferings of helpless little ones, and for the broader and nobler, because farther-reaching, purpose of improving the race.

PRESENT POSITION OF THE ELECTRICAL TREATMENT OF - EXTRA-UTERINE PREGNANCY.

BY
A. BROTHERS, B.S., M.D.,
New York.

First employed in Italy by Bachetti in 1853, and later by Braxton Hicks in England in 1866, the electrical method of treating ectopic gestation was first resorted to on this side of the Atlantic by Allen, of Philadelphia, in 1869, and has since remained almost a purely American plan of treatment. In the paper which I wrote five years ago for The American Journal of Obstetrics (May, 1888) I collected statistics of forty-three cases treated by electricity, with one death. In a paper published two years later, on the "Subsequent Behavior of Cases treated by Electricity," I found that the twenty-five cases which I had been able to trace were doing well after a lapse of one to eight years, and that none of them had been compelled to undergo secondary operations. Many of these patients still carried traces of the old trouble, but without perceptible inconvenience.

Within the last few years the epidemic of laparatomy fever which originated in Europe has infected our shores and spread over our continent to such an extent as to temporarily displace this treatment from the position it properly deserves. As a result the literature of the past few years shows a smaller number of cases published than we should expect from the past success of this treatment, although a small band of able practitioners

¹ Read by title before the American Electro-Therapeutic Association at Chicago, Ill., September, 1893.

² The American Journal of Obstetrics, 1890, vol. xxiii., p. 113.

continue to adhere to their convictions and employ it, under judicious restrictions, wherever it is properly indicated.

To bring this subject down to the present I have reviewed the literature at my command, and am thus enabled to present the table on pages 58 and 59.

I have therefore been able to find records of eighty-five cases of extra-uterine pregnancy in which electricity was employed to destroy the fetus. I do not regard this as a complete list, for some cases have been overlooked and others have not been published. It is sufficient, however, to show that the method has been pretty extensively employed.

In two cases ^{60,61} the treatment apparently failed in the hands of very able men (Coe and Wenning), but subsequent laparatomy showed the diagnosis to have been faulty, for in both cases the gestation was intra-uterine. Coe saved his patient after she aborted, but Wenning, who had resorted also to aspiration, was unfortunate in losing his. In Case S1, that of Lewis, electricity was discarded and abdominal section performed, resulting in recovery. In one of Blackwood's cases the extra-uterine mass had shrunk two years later to one-half its original size, and he was in favor of galvanism to further its absorption. The patient, however, was advised by a specialist to submit to laparatomy, from which she died. In none of these cases can the electrical treatment be accused of having done any harm.

Collapse during the administration of the current has occurred in the cases of Mundé, ²³ Janvrin, ³⁴ and Coe ⁵⁴; but only one case—that of Janvrin ³⁴—proved fatal. In two of Blackwood's cases ⁷⁹, ⁷¹ the symptoms of internal hemorrhage due to partial rupture—shock, faintness, debility, etc.—were present, but the doctor writes me that the cases made favorable recoveries.

Aspiration was resorted to in three cases in connection with electricity by Braxton Hicks, Lusk, and Wenning. Hicks and Wenning lost their patients—the latter supplementing the procedure by laparatomy—but Lusk saved his case after assisting the discharge of the fetus through a vaginal rent.

The fetus was displaced from the tube into the uterine cavity in five cases—those of McBurney, Garrigues, Blackwood, Grandin, and Carriker.

The case of Landis 5, 11 is unique, in that the same patient suffered twice from extra-uterine pregnancy, but was in each instance successfully treated by electricity.

TABLE OF CASES OF EXTRA-TTERINE PREGNANCY TREATED BY ELECTRICITY.

Remarks.	Puncture later caused death.	Fetus discharged through vagina.	Same case as No. 5.	Normal pregnancy not disturbed.	Collapse after first application.	Fetus expelled into uterine cavity, Also puncture. Fetus removed through vaginal rent,	Fatal result after third application.
Result.	Recovery. Beath Recovery.	Recovery. Recovery. Recovery. Recovery. Recovery.	Recovery. Recovery. Recovery. Recovery. Recovery.	Recovery. Recovery. Recovery. Recovery. Recovery. Recovery.	Recovery. Recovery. Recovery. Recovery. Recovery. Recovery.	Recovery. Recovery. Recovery Recovery	Recovery. Recovery. Becovery. Recovery. Recovery. Recovery. Recovery.
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Case of	Bachetti Hicks Allen Allen	Landis. McBurney. Reevo. Harrison. Lusk.	Wilson Landis Billington Emmet.	Herrick Hoehmann Westcott Rockwell Sims.	Cocks Lambert Mundé Berlin Sibbald Briggs	Stoddard Lusk Garrigues Lusk	Aveling Gardner Gardner Gardner Petch Trush. Van de Warker
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Galvanism United States Recovery (?) United States Recovery Galvanism France Frances Recovery Galvanism U. S. (?) Recovery U. S. (?) Recovery Recovery Galvanism U. S. (?) Recovery Recovery Galvanism U. S. (?) Recovery Recovery Galvanism U. S. (?) Death Death	: :	ry.		Faradism, later galvanism United States Recovery. Galvanism (1). Galvanism (Bussia. Recovery Russia. Recovery Readvanism. Russia. Recovery Rectro-puncture. Russia. Recovery Galvanism, later electro-Russia. Recovery Galvanism, later electro- Russia. Recovery Faradism (?).	Galvanism United States Recovery. Galvanism United States Recovery. Galvanism United States Recovery. Galvanism Russia Recovery.
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In Westcott's case ¹⁷ the extra-uterine pregnancy was associated with normal pregnancy, which was not disturbed by the treatment, and Bierwirth's patient ⁹² was suffering from typhoid fever while undergoing the same treatment.

The fetus was expelled through vaginal or rectal rents in four cases—those of Lusk, ³⁰ Chadwick, ³⁰ and Blackwood. ^{72, 73} These patients ultimately recovered.

Only one death—that of Janvrin's patient **—has occurred in seventy-eight cases in which electricity was employed without puncture, and in this case there were marked symptoms of hemorrhage previous to the resort to electricity.

The nature of the current used has varied. In twenty-seven cases faradism was used, in twenty-five cases galvanism, either current (not stated) in nine cases, both currents successfully in sixteen cases, galvano-puncture in seven cases, and statical electricity in one case.

Of the seven cases treated by electro-puncture, there were five recoveries and two deaths. This proves electro-puncture to be a very dangerous method, the bad results being undoubtedly due to the puncture and not to the current. Similar bad results have followed the use of simple puncture with aspiration or followed by the injection of drugs. In my first paper I referred to four-teen cases of failure or death after the use of simple tapping or injection of drugs.

Although the electrical treatment has been chiefly employed in our own country, my table shows the interesting fact that it has also been used five times in Russia, five times in England, and once in Italy, Canada, Germany, France, and Australia.

It may be interesting to quote at this point the most recent views of many of the best authorities regarding this plan of treatment. Playfair* says: "This practice is perfectly safe, and there can be no rational objection to its being tried." Lusk, in the last edition of his work on "The Science and Art of Midwifery" (New York, 1892), says: "The danger which threatens the life of the patient is often imminent, and assistance from afar is not always easy to obtain. Under these conditions the indication for treatment is plainly the adoption of measures to destroy the life of the fetus, and thus, by arresting the growth of the ovum, to diminish the chances of rupture and hemorrhage." In a personal interview with Prof. Lusk he stated that

^{* &}quot;A Treatise on the Science and Practice of Midwifery," London, 1889.

he was as much interested in the electrical treatment as ever, but lately had met cases in which hemorrhage had already occurred and which required operative interference. He was perfectly convinced of the efficacy of electrical treatment in suitable cases, and was perfectly sure that in the cases in which he had successfully resorted to it there was no possibility of a mistake in diagnosis.

Prof. T. G. Thomas, early in the summer, also stated that he was as firm a believer in the treatment of these cases by electricity as ever. In Thomas and Mundé on "Diseases of Women" (Philadelphia, 1891) it is stated: "At one extreme stand able and conservative practitioners who appear to favor the position that, as a very general rule, we should stand calmly by with folded arms and accept without effort or resistance the terrible chances of death which attend these cases. At the other we see enthusiastic ones, with strong surgical proclivities, who would apparently resort to laparatomy in every case in which diagnosis is possible. On a middle ground, one lying between these extremes, the truly conservative surgeon will find his appropriate position."

Although Pozzi in his "Treatise on Gynecology" (American edition, 1892) condemns the use of electricity, the able editor of this work (B. H. Wells), quoting Byford, says: "If we have a case of extra-uterine pregnancy in the early months it is safe to destroy the fetus by electricity and keep the patient in bed until absorption has noticeably commenced. If profuse, repeated hemorrhages occur it is safer to operate at once."

Parvin* says: "Throwing aside all doubtful cases, there remains a strong argument from actual experience in favor of the treatment of ectopic gestation, prior to the rupture of the fetal cyst, by electricity."

The works on electricity in its relation to gynecology by A. H. Goelet,† and Grandin and Gunning,‡ are likewise strongly in favor of the employment of electricity in the treatment of early cases of ectopic gestation. Byford, Mann, Skene, Wilson, and many other eminent specialists in gynecology have also in recent times expressed themselves in favor of this plan of treatment.

^{* &}quot;Science and Art of Obstetrics," Philadelphia, 1890.

^{† &}quot;The Electro-Therapeutics of Gynecology," Detroit, 1892.

t "Practical Treatise on Electricity in Gynecology," New York, 1891.

The Boston Medical Society, at its meeting held on November 12th, 1892, received the report of the chairman of a committee appointed to investigate the present condition of medical opinion with regard to the subject of extra-uterine pregnancy.* The report reads: "Immediate celiotomy, so soon as the diagnosis is established, is then, in the judgment of your committee, the only treatment which should be considered before rupture of the tube." If the gentlemen of this committee can spare the time to review the facts gathered in this paper, they may charitably allow a small place, at least, for the treatment of some of these cases by electricity. The fact is, in spite of the highly moral position taken by Lawson Tait, that feticide in extra-uterine pregnancy is considered justifiable in the interests of the mother by a great many practitioners. It is also a fact, which this paper proves, that, beyond one death in seventy-eight cases, no injury has ever been done by the use of electricity, and where it has been directly abandoned for laparatomy no harm was done by the previous treatment. The treatment has maintained its reputation for harmlessness; and although, in the eyes of some, it has been dubbed "ridiculous" and "cowardly" and the product of "ignorant obstinacy," it continues to assert itself as a simple, innocent procedure which has its own proper sphere of usefulness.

162 Madison Street.

THE FIRST SYMPHYSIOTOMY IN AMERICA. MARCH 12TH, 1892.

BY

WM. THOS. COGGIN, M.D., Ph.D., Athens, Ga.

The first delivery under pubic section recorded in the United States is that of Jewett, of Brooklyn, bearing date of September 30th, 1892. That this was not the first symphysiotomy in this country I am well able to establish, and I have the honor to present here a short report of a delivery under pubic section by myself which was made six months and eighteen days prior to

^{*}E. Reynolds, Boston Medical and Surgical Journal, January, 1893, exxviii., p. 107.

any other on record. In reporting this case I wish to state that, being acquainted with the method of Morisani, I followed it as near as the circumstances would permit. The history is as follows:

On March 12th, 1892, I was practising medicine in Etowah County, Alabama. About 7 o'clock A.M. I was summoned in haste to the bedside of Mrs. C. H., who was reported in labor. I arrived at 9:30. The mother of the patient said that labor had begun at 6 o'clock on the evening before. Seemingly there had been no apprehension of trouble on the part of the husband or mother of the patient, as I found only an old negro woman in attendance, from whom I learned that "everting wus alright, only dat de chile won't born." The patient, an intelligent woman of 23 years old, was quiet and in good condition. Examination revealed a good reason why the child "wouldn't born." The pelvis was narrowed to less than twothirds normal size, with a large, unyielding head pressing closely into the superior strait. Having no pelvimeter, the extent of the narrowing could not at that time be accurately ascertained; but having many times measured the female pelvis with my fingers, and afterward confirming my experiment by measuring the same subject with the pelvimeter, I was in this case able to approximate the extent of the deformity as follows: anteroposterior, brim and cavity normal, outlet 3.75 inches; oblique, cavity 3.75 inches; transverse, brim 4.25 inches, cavity 3.75 inches, outlet 3 inches.

The os was already fully dilated, the vertex could be plainly felt, pains were strong and coming on at regular intervals, though the patient at this time seemed somewhat nervous and was pale. There was no history of constitutional disease, no rickets, scrofula, or venereal disease of any kind. In the course of the pregnancy there had been nothing that would have excited suspicion in the closest observers. The deformity of the pelvis at once impressed the fact upon my mind that some radical procedure had to be resorted to. I began to examine the condition of the child. The heart beat was plainly and distinctly heard two inches to the left of the umbilicus. This fact of a living child convinced me that Cesarean section or symphysiotomy must be done. Calling Dr. Slaughter, who fortunately was close by, he agreed with me that the sooner we operated the better it would be for both mother and child. He had never seen a Cesarean section,

and knew nothing whatever of how the pelvic channel might be widened by pubic section. With pencil and paper I made, as near as I could, an outline of the patient's pelvis; from this dia gram it was not hard to see that by dividing the symphysis there would, without great risk, be sufficient space for the head to pass. I insisted on this being done in preference to Cesarean section or the sacrifice of the life of the child by craniotomy, one of which must be done very soon. Dr. Slaughter now agreed that the idea was at least reasonable and applicable to this case. So with his full approval I prepared to operate, while he prepared antiseptic dressings. I procured a bar of lead and with a hatchet hammered it into a plate; this I dipped into boiling water and scraped smooth, curving it to fit my finger.

The parts being shaved and rendered aseptic, I introduced a rubber catheter into the urethra and began the operation. Pressing the urethra to one side, the soft parts were divided from below upward until the symphysis was reached, with the lead plate as a shield. I now pressed the back of the blade against my finger-which was covered by the lead plate for protection, and to protect the soft parts above from injury by the point of the knife—and with my finger made the necessary pressure, from behind forward, to divide the symphysis, which was easily and quickly done. The incision was now extended upward for half an inch. Bringing the knees upward and outward, the symphysis easily opened two and three-fourths inches. Though the patient was well anesthetized, the pains had kept up to some degree. Applying the forceps and making decided traction in the direction of the superior strait enabled me to complete the delivery in a short time. After delivering the placenta the parts were thoroughly cleansed with a bichloride solution 1:2000. Three deep sutures were now inserted from without inward and downward, embracing and bringing in close apposition all the deep tissue directly behind and below the symphysis. Superficially the cut was closed by twenty-one closely inserted and interrupted sutures. The vagina was again cleansed and packed with aseptic wool. The cut was covered with carbolized cotton, over which was passed a bandage of iodoform gauze. The question of how to best render the hips immobile now presented itself. That this was an important feature I at once recognized, and successfully completed it by the following method: Adhesive strips two inches wide were passed from the trochanter on the right to the same point on the left, thence from the ischium on the left to the crest of the ilium on the right, and vice versa, crossing just above the symphysis; then a board ten by sixteen inches, well padded with aseptic wool, was placed under the hips and allowed to extend downward to a point opposite the trochanter; over this was passed a strong and well-fitting bandage, which rendered the pelvis so thoroughly immobile that the patient was carried to another bed without inconvenience. The hemorrhage amounted to no more than some venous oozing which was not even annoying; the total amount lost would not exceed three ounces. With some little stimulants the patient rallied well and rapidly.

The child was a well-formed male at full term, weighing 11.35 pounds, and measuring sixteen and three-eighths inches in length. The head measured as follows: Occipito-mental, 5.50 inches; occipito-frontal, 5.25 inches; cervico-bregmatic, 4 inches; biparietal, 5.75 inches; bitemporal, 4.1 inches; fronto-mental, 3.55 inches. The time actually employed in the operation was less than thirty minutes. The knife used was an ordinary curved bistoury with broad blade. The sutures used were of iron-dyed silk. The dressings, except adhesive strips and board, were changed and the parts cleansed every day for twelve days. The highest degree of temperature was on the fourth day after operation, when it reached 102.2° F. The same day milk appeared in the right breast, and the child was allowed to nurse from that time on. Three-grain doses of quinine were administered thrice daily during the whole time. She was allowed to eat milk toast, rice, chicken broth, and beef peptonoids. Twelve days after the operation the entire wound had healed, except some little granulations directly above the vestibule. On the seventeenth day she was allowed to stand. The symphysis was firmly united and there was no difficulty in walking. Thirty-one days after the operation the patient was in every way as well as if she had gone through an easy normal labor.

I saw the patient in October of this year. She is now in the best of health. After earnest persuasion she allowed me to measure her pelvis with a pelvimeter, and from this measurement I find that I was not far wrong on the day of the operation. The diameters, as taken by a pelvimeter, are as follows: Antero-posterior, cavity 5 inches, outlet 3.5 inches;

oblique, cavity 3.3 inches; transverse, cavity 3.2 inches, outlet 3.1 inches.

She informed me that the menses appeared the seventh month after confinement and that they had been regular since. There is but a mere line of cicatrix to show where the cut was made. Her gait is the same as before the operation.

The child is a bright, healthy little fellow, walks well, is fast learning to talk, and has sixteen teeth.

No. 11 North Thomas street.

PREGNANCY FOLLOWING A PARTIAL SUPRAPUBIC HYSTE-RECTOMY COMPLICATED BY HEMORRHAGE THROUGH THE ABDOMINAL CICATRIX.¹

BY

X. O. WERDER, M.D.,

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The case which I am about to describe is so interesting and, I believe, unique in many of its features that I choose this opportunity to put it on record.

Mrs. Mary L., 29 years old, married since August, 1890, but sterile, consulted me for the first time in June, 1891. She had been in good health until about five or six months ago, when she noticed a slight enlargement of her abdomen, accompanied by discomfort and, at times, pains in her pelvis. The swelling of her abdomen gradually increased, until at the time she first saw me it had attained the size of a five or six months' pregnancy. With the enlargement of her abdomen the discomfort in the pelvis increased. The pains "at the bottom of the bowels" became very severe and were of a bearing-down character. Locomotion was very much interfered with, and she was frequently unable to lie down at night. Her digestion became deranged and her health began to fail. While she possessed a fair amount of adipose, she was pale and anemic, and the least exertion fatigued her. Her menses, which for years had been somewhat

¹ Read before the meeting of the American Association of Obstetricians and Gynecologists held at Detroit, June, 1893.

painful, were now accompanied by considerable suffering, though the flow was scanty, lasting only three days. An examination showed a firm, hard, and roundish tumor occupying the centre of the abdomen and extending from the symphysis pubis to the umbilicus, and attached to the posterior surface of the fundus uteri. Tonic treatment, continued for three months, produced a marked improvement of her general health, but had no effect on the local condition in the pelvis. She was advised to go to Mercy Hospital, where for two months electricity was applied according to Apostoli's method, fifteen applications in all, varying from one hundred to one hundred and fifty milampères. This treatment neither affected the size of the tumor nor did it produce the slightest symptomatic improvement, so that the patient clamored for operation, which was performed December 3d, 1891.

The tumor was a fibromyoma attached by a very broad and thick pedicle to the posterior and right surface of the fundus uteri. The base of the tumor was encircled by the elastic ligature closely hugging the uterus, and, as subsequent events proved. including a small portion of the uterns itself. The tumor was transfixed with pedicle needles immediately above the elastic ligature, and cut off above this point. The uterine cavity had not been opened. The pedicle was fixed in the lower angle of the wound in the usual way. The tumor weighed twelve pounds. Convalescence was uninterrupted. Ligature and pedicle came away on the twentieth day. Patient left the hospital January 17th, 1892, about six weeks after the operation, with a small fistulous opening at the bottom of the abdominal wound. Her menstrual period returned February 19th, about a month after leaving the hospital, and at this time she noticed a slight bloody discharge from this sinus.

In March her catamenia did not appear at the expected time, and soon afterward other symptoms of pregnancy developed. About this time I found the cervix high up in the pelvis, uterus firmly attached to the abdominal wall, soft, elastic, and enlarged. The fistula in the lower angle of the wound was still open, just about large enough to introduce a sound. A subsequent examination (about a month later) confirmed the diagnosis of pregnancy. She was then having some pain in the pelvis about the uterine attachment to the abdominal walls. With the exception of this pain, or rather discomfort, her pregnancy progressed very

favorably thus far. At the beginning of the fourth month a gradual rotation of the uterus began at its point of fixation to the abdominal wall—i.e., the uterine tumor no longer occupied the middle of the abdomen, but began to crowd more to the left of the median line. During her whole pregnancy the left side of the abdomen was the principal seat of the pregnant uterus, it scarcely reaching beyond the median line toward the right side.

At the end of the fourth month there was a copious hemorrhage from the fistulous opening at the lower angle of the abdominal cicatrix, which by this time had become enlarged from the internal pressure to the size of a half-dollar, the amount of blood lost being at least a pint according to the estimate of the patient. About three weeks later there was another hemorrhage from the same place to the amount of a teacupful of blood. At the end of the sixth month she again lost about a cupful of blood. There were seven hemorrhages in all, five of which were profuse, producing a marked anemia of the patient and causing a great deal of anxiety as to the ultimate result. In order to have her under better control and to be ready for any emergency that might arise, I advised her to go to the Rosalia Maternity Hospital, which she entered October 26th, 1892. The last hemorrhage had occurred about a week before her admission to the hospital. During the last six or eight weeks she had remained in bed, hoping that by absolute rest the hemorrhages would be less likely to return.

Labor began October 30th, four days after entering the hospital, but at least three weeks before her expected confinement. The os uteri at the time of labor was very high up and very hard to reach. The first stage of labor was very slow, dilatation not being complete until early the next day. The patient by that time being pretty well exhausted, it was terminated by forceps. During labor there was only a slight bloody oozing from the fistulous opening. The child was living, but very small and thin. The placenta was found adherent just under the fistulous opening from which the bleeding had taken place, requiring manual separation. At this place the hand in the uterus noted an apparent absence of the uterine wall, and the placenta seemed to be attached to the abdominal wall around the external sinus. The abdominal wall was extremely thin, as could be easily ascertained by the hand placed over it and pressing against that in

the uterus. After emptying the uterus it contracted at once, leaving a small depression in the abdominal wall around the fistula. The loss of blood during the third stage of labor was not considerable. Patient made an uninterrupted recovery, and left the hospital on November 28th with a living, healthy child, just four weeks after her delivery. The fistulous opening had become perfectly closed by that time.

Mrs. L. presented herself to me for examination May 2d, 1893, with her child, which was hearty and well. The patient has been in good health since she left the Maternity Hospital. She has not menstruated since, and is still nursing her child. The abdominal wound is perfectly healed; there is no trace of fistulous opening. The cervix is very high up in the pelvis; the uterus small, measuring two and a half inches, and still firmly attached to the abdominal walls. The body of the uterus seems to consist of two distinct cavities, the one on the left evidently being the uterine cavity proper; turning the sound a little to the right, it enters another cavity, which is about one-quarter inch deeper than the other and leads to the bottom of the abdominal cicatrix, the former fistulous opening, at which place the point of the sound can be distinctly felt directly under the cicatrix.

There is no doubt in my mind that the slough under the elastic ligature extended into the body of the uterus and on separating opened the uterine cavity; and that there was a direct communication between the fistulous opening in the abdominal wound and the uterine cavity, which allowed some of the menstrual blood to escape through it at her menstrual period; and that, furthermore, the source of the hemorrhages during pregnancy was the placenta itself, the upper edge of which was attached immediately under the bleeding surface.

Menstruation through an abdominal fistulous opening occurred in another case, in which I removed a fibroid tumor of the uterus with thick, short pedicle in a young woman, the case being almost identical with the one described above. The pedicle was treated in the same manner as in the previous one. During the first and second days of every menstrual period, which lasts from three to four days in all, there is a slight bloody discharge through an opening in the lower angle of the abdominal cicatrix not larger than the head of a pin, which during the intermenstrual period is marked by a minute black spot.

Pregnancy following a complete hysterectomy would of course be an impossibility, but even following the more conservative operations upon the uterns for subperitoneal or pedunculated fibroids it seems to be a very rare occurrence. In A. Martin's seventy-eight recoveries following enucleation of fibroid tumor in which the cavity of the uterus remained intact, pregnancy occurred only once; in addition to this he was able to record only two more cases in which gestation followed the same operation. In the literature at my disposal I was not able to find a single case followed by pregnancy in which a part of the uterus was removed, as was evidently done in the case reported.

The fact that pregnancy does occur, however, though in a very small percentage of cases, should induce us, in the first place, to practise conservatism in the performance of these operations i.e., where we have to deal with a single tumor in the uterus of a young woman, which can be removed without sacrificing the whole corpus uteri, we should try, in my opinion, to preserve that organ in as nearly normal a condition as possible. This object can, in cases such as the subject of this paper, be best attained, in my opinion, by the enucleation of the tumor as practised by A. Martin. While enucleation does not increase the risks of the operation very materially, it has this decided advantage over the method employed in my case, that it leaves an absolutely intact uterine cavity without fixation of the uterus to the abdominal wall, and would therefore prevent any unpleasant and dangerous complications such as were encountered in the case reported.

To summarize briefly, the principal points of the case described are:

- 1. The menstrual discharge through a small fistulous opening remaining after a partial supravaginal hystcrectomy, which communicated with the cavity of the uterus.
- 2. Pregnancy occurring eight or nine weeks after operation in a woman previously sterile, in spite of a utero-abdominal fistula.
- 3. Pregnancy terminating in the delivery of a healthy though poorly developed child, at, or at least near, the end of her term, in spite of a firm and unyielding fixation of the uterus to the abdominal wall, and in spite of frequent and profuse hemorrhages, from the placental site, through a sinus opening in the lower angle of the abdominal cicatrix.

^{1 &}quot;Ueber Myomoperationen" in Zeitschr. für Geb. und Gynäk., 1890.

POLIOMYELITIS ANTERIOR ACUTA INFANTILIS.

ITS ETIOLOGY AND TREATMENT. A CLINICAL STUDY OF SEVENTY-FIVE CASES, 1

BY

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Prognosis. As regards Life.—Erb a says "acute atrophic spinal paralysis does not appear ever directly to threaten life; its prognosis is therefore absolutely favorable so far as life is concerned." Seeligmüller says "the possibility of a fatal termination in the initial stage cannot be known, although no case has been published in which the anatomical condition of a child dying of convulsions was the same as that of a child with infantile spinal paralysis. It is certainly most desirable that the spinal cord of children dying with severe convulsions should always be carefully examined." Strümpell goes a step further when he says "it is not impossible, but it is not yet proven, that many of the cases where children die speedily with convulsions are to be regarded as the initial stage of acute polionyelitis." Gowers says "the danger to life is probably greatest when there is severe constitutional disturbance, and is, in consequence of this, often before the development of the characteristic paralytic symptoms." Drummond 'reports an autopsy made in the case of a girl, 5 years old, who died six or seven hours after the commencement of her illness. Eddy breported a case in which he had given a favorable prognosis, based, as I understood it, simply on the grounds of the diagnosis. The child died on

¹ Continued from p. 831, December number.

² Ziemssen's "Cyclopedia of the Practice of Medicine," vol. xiii., p. 706.

^{3 &}quot;Spinale Lähmungen im Kindesalter."

^{4 &}quot;On the Nature of the Spinal Lesion in Poliomyelitis Anterior Acuta," Brain, 1885-1886.

⁵ Transactions of the Illinois Medical Society, 1892, discussion of a paper on Infantile Paralysis.

the fourth or fifth day, soon after the development of the paralysis.

Seeligmüller's hypothesis of the possible fatal termination of this disease has now been proven by autopsies to be a truism. The accompanying statistics would indicate that the attending physician frequently fails to properly diagnosticate the disease, even after the paralysis develops:

Diagnosis and Prognosis by Attending Physician in Twenty-seven Cases.

Poliomy elitis anterior2	
Hip-joint disease1	
Dislocation of hip1	
Indigestion	
Worm fever 1	
Stomach fever1	
Malaria2	
Intermittent fever	
Meningitis; no history of fever1—11	
Poliomyelitis anterior, seen at hospital during acute stage 2-	-13
I. Patient under doctor's care, but disease not recognized; "inability	4
to walk was due to weakness, and the child would outgrow it".	4
II. Patient under doctor's care, but the mother, and in one case the patient, was the first to recognize the paralysis	2
III. Patient under doctor's care, but the paralysis was not noticed till	
child began to go about	10
IV. Onset was so insidious that the dragging of the foot was the first	
thing recognized	4
	33
Ninus last four and two copes diagnosticated at heapital	6
Minus last four and two cases diagnosticated at hospital	-0
	27

i.e., in 27 cases the disease was properly diagnosticated in 2 cases only, or 7.4 per cent.

From the above facts—viz., (1) that the disease cannot be positively diagnosticated before the appearance of the paralysis; (2) that even then many physicians do not recognize the paralysis as such; (3) that in a case of death under similar circumstances no autopsy is made, and therefore the cause of death cannot be known—it is highly probable that poliomyelitis anterior is much more commonly fatal than statistics would warrant us in believing. Among my own cases are the following notes: 1 brother died with spinal trouble at 2 months; 1 brother died at 18 months while teething in June; 1 brother died of convulsions; 3 brothers died of summer complaint, no convulsions.

In severe cases, at least, the prognosis as regards life would be well to be guarded.

2. The Prognosis as to the Relation of the Mode of Onset to the Initial and Permanent Paralysis.—Erb—and Seeligmüller says practically the same thing—says of the initial fever: "It has been very little examined and investigated as yet." It is not yet determined whether the fever stands in any definite relation to the intensity and extent of the disease in the initial stage, but it certainly appears as though the intensity of the fever bore no definite relations to the extent of the disturbances that are left behind." Gowers says: "The relation of the general disturbance to the onset of the paralysis presents great variations, which appear (from comparison of cases) to be independent of any variations in, or special features of, the spinal symptoms." "There is no proportion between the intensity of the fever and the extent of the subsequent paralysis" (Jacobi).

Since there have been so few records of the temperature made during the acute stage, I will give the rather imperfect ones of four cases, three of which I saw during the attack, and the fourth one month later, in which the temperature chart was kindly sent me by the attending physician.

Case I.—Patient æt. 13 months, first seen on seventh day of attack:

Time,	Temperature (rectal).	Pulse.	Respiration.
Seventh day	100°	120	40
	99.8°	112	32
	99.8°	112	32

Case II.—Patient æt. 2 years:

Time.	Temperature (axil.).	Pulse.	Respiration.
Third day	101° 97.8°	128 100	26

¹ Edition 1878.

Case III.—Patient æt. 1 year. Furnished by attending physician:

Time.	Temperature.	Pulse.	Respiration.
Second day	102°	140	
Third day	102°	140	
Fourth day	102°	140	
Fifth day	101°	130	
Ninth day	Normal.	• • •	

Case IV.—Patient æt. 21 years:

Time.	Temperature (rectal).	Pulse.	Respiration.
Sixth day, 2 P.M	101.8°	140	60
Seventh day, 2 P.M	103.2°	140	60
Seventh day, 8 P.M	102.6°	140	40
Eighth day, 8 A.M		120	36
Eighth day, 8 P.M	100.2°	106	32
Ninth day, 2 P.M	101°	120	52
Tenth day, 2 P.M	100.6°	120	52
Eleventh day, 5 P.M	100.6°	120	40
Twelfth day, 1 P.M	100.2°	130	40
Thirteenth day, 5 P.M.	. 97°	120	48
Fourteenth day	99.2°	118	44
Fifteenth day	100.2°	120	52
Sixteenth day	100.2°	120	48

In his typical temperature chart Gowers gives as the highest temperature reached the second and third days 101°; the normal temperature—98°—on the seventh day. Cases 1 and 2 would accord with this. In both these cases the onset was gradual and the initial paralysis was limited to one lower extremity.

Of the 69 cases in which the mode of onset was ascertained, there was pyrexia without coma or convulsions in about 45 per cent; this ranged from "feverish" to a temperature of 101° to 103.2°, with a duration of from 12 hours to 3 weeks; average time, 5 to 6 days. The onset was said to be apyretic in 6 per cent. This view is wholly theoretical, since the thermometer was not used, and occurred in cases coming on during the night or suddenly while the child was playing.

The fever may be accompanied by convulsions—in 14 per cent of the cases varying from a single convulsion, lasting 10 minutes, to a series of convulsions lasting 8 hours; or there may be a comatose condition present—8 per cent lasting from 12 hours to 4 days.

Table showing the Mode of Onset in Sixty-nine Cases of Poliomyelitis Anterior, with the Initial Paralysis and Extent of Paralysis at the Time of Examination.

I. Pyrexia: The fever was either high, continued, or accompanied by coma or convulsions.

Initial paralysis. Entire body	Paralysis at time of examination. Both lower and right upper extremities
II. Trav	matism.
Trunk and both lower extremities 1 Both lower extremities	Both lower extremities 2
III. Suddenly while	Child was Playing.
Both lower extremities. 1 Right " extremity 2 Left " " 1 Total 4	Right lower extremity 3 Left " 1 Total 4
IV. Ove	r- $night$.
Right lower extremity	Right lower extremity
V. Genera	l Malaise.
Left lower extremity 1	Left lower extremity 1

¹ Three of the above cases were paralysis of both bladder and rectum, and 1 of the bladder alone.

² In 1 case paralysis of both bladder and rectum.

VI. Paralysis first thing Noted.

VI. I wratysis j	irst thing rividus
Both lower extremities	Both lower extremities
Total 3	Total 3
VII. Following	other Diseases,
Both lower extremities	Both lower extremities 2 Left " extremity 7 Right "
Total12	Total
VIII. Mode of O	nset Unclassified.
Entire body	Both lower extremities 1 Left "extremity 2 Right "" 1 Total 4
Résumé o	of Table.
Initial paralysis. Entire body	Extent of paralysis at time of examination. Both lower extremities and erector spinæ
Entire body	Both lower extremities and erector spine

The accompanying table shows that where there was a high fever, or a moderate continued fever, or fever accompanied by coma or convulsions—33 cases, or 47 per cent of the entire number—in only 3 cases, or 9 per cent, was the initial lesion contined to one lower extremity, while in 4 cases, or 12 per

cent, the entire body was paralyzed, and in 5, or 15 per cent, the trunk and both lower extremities were involved. The extent of the paralysis at the time of examination was in only 13, or 39 per cent, confined to one lower extremity, while 17, or 54 per cent, had both lower extremities involved; while in 3 of these cases a paralysis of the erector spinæ muscles, and in 1 also an upper extremity, 2 cases had one lower and one upper extremity paralyzed.

Contrast with these in the extent of the initial and permanent paralysis the next list of 18 cases in which the paralysis was the only symptom noted. These cases occurred suddenly, as when the child was playing; it fell over and was picked up paralyzed; or the paralysis occurred over-night; or there was a slight malaise; or the dragging of the limbs was the first thing noticed. In 16, or nearly 89 per cent, of these cases was the ini-

tial paralysis confined to one lower extremity.

The above statistics would lead to a deduction I have nowhere seen made—viz., that a high fever of short duration, or a moderate fever lasting one week or more, or fever accompanied by a comatose condition or convulsions, all indicate an extensive and severe initial as well as permanent paralysis. This relation between the pyrexia and the extent and intensity of the initial as well as the permanent paralysis would seem to indicate that the fever was due to the inflammatory processes in the cord. A moderate, long continued—i.e., one week or more—fever was followed by as serious results as a shorter fever of higher grade.

TREATMENT. 1. Of the Acute Attack.—We may then believe that the mode of onset gives the key to the extent of the lesion. In the very mild cases we may imagine a hyperemia with infiltration of the gray matter with leucocytes; swelling of the nerve cells, which may be still structurally intact; followed by a granular pigmentation of the ganglionic cells and the disappearance of their prolongations and atrophy of the cells, and finally their disappearance. This lesion causes an interruption in the motor parts, followed by immediate paralysis. The motor nerve, cut off from the source of its nutriment, degenerates, followed by degeneration and atrophy of the muscle.

Where the onset is ushered in with some days of fever and an extensive paralysis, we recognize that there has been a severe congestion, followed by an acute inflammation more or less diffused throughout the anterior horns. But we know from experience that the lumbar enlargement will suffer most; that its natural course leads on to softening, with destruction of the ganglionic cells, and that permanent paralysis must result. Or if the lesion is very intense it may spread throughout all the structures of the cord.

The suddenly developed severe cases are probably due to actual hemorrhage into the gray substance, while there is dilatation and thrombosis of the vessels. We have at the onset to deal with an acute exudative inflammation, and the fact that necessitates an immediate, vigorous treatment is the knowledge that at the immediate onset of the paralysis only some of the ganglionic cells have disappeared, while the others are threatened by the great pressure of the dilated vessels and infiltration of the tissues, as well as lack of nutriment due to the blood stasis.

The treatment is essentially the same in this first stage, only modified to suit the requirements of the case.

There are four chief conditions for which a physician will be called for the first time. In a mild case the child was taken out of bed, and it was found that one limb was paralyzed; the child, who has been feverish for several days, now has a high fever; the child has just fallen into a comatose condition, out of which the mother cannot rouse it; or the child has just been taken with convulsions.

Case.—To such a case as the last I was called hurriedly one evening last July. The patient, a child of 3 years, was robust-looking and had always been well until a few days preceding the attack. On the day before she seemed drowsy, but the appetite was good and she ate several bananas and some veal. On the day of the attack she seemed even more dull than on the preceding day, had lain around most of the day, and had again eaten veal at a 1 o'clock dinner. Tendency to constipation with clay-colored stools. At 6 p.m. she vomited very freely, followed by retching and convulsions; the first one lasted three-quarters of an hour. At 7 p.m., just after I arrived, the child was going into another convulsion. Rectal temperature 103°, pulse 160; respiration 32°, was very irregular and stertorous. The child had been unconscious from the first. She lay extended on the knee of the nurse, with the head thrown back. Opisthotonos continued for two hours. The eyes were fixed and staring.

Twitching began about both eyebrows and left arm; as the convulsions became more severe they were confined entirely to the left side of the face, left arm, and left lower extremity; the entire right side of the body was motionless. When the convulsions had nearly ceased the right arm began to twitch; the right leg did not move at all. The twitching did not wholly cease for one hour. The head was very hot, and for some time after the convulsion ceased the left side of the face was markedly hotter than the right.

There occurred to me at once, considering the age, the season of the year, and previous history of the case, a strong possibility of the occurrence of paralysis, probably a left hemiplegia.

Treatment.—A mustard bath had already been given, as well as a dose of bromide. Notwithstanding the hot evening the child was wrapped in a blanket and was in a profuse perspiration. Ice was at once applied to the head and a clyster given to unload the bowels. As soon as it could be gotten she was given, per rectum, choral gr. iv. and potassii bromidum gr. x.; half an hour later, the twitching not having ceased, she was given the same dose by the mouth. A leech was applied back of the ear to the left mastoid process; after its removal the blood continued to flow for two hours. At 9 P.M., on beginning to seem restless, the third and last dose of the chloral mixture was given. 10.45 P.M.: Temperature 98.8°, respiration 32; pulse 120, bounding. The child was quiet; awoke for a few minutes, recognized her mother, and again fell asleep. The head was cool, almost cold, and the face very pale. The cloths wrung out of ice water, which had replaced the ice bladder, were removed at once. The bleeding from the leech bite had stopped entirely. Ordered hydrargyri chloridum mite gr. 1/4 every half-hour until six had been given; also potassii bromidum gr. v. in mistura potassii citratis 3 i. every four hours. Matzoon was all that was allowed by way of nourishment.

The following morning, on making my visit, I found the child up and being dressed—"she wanted to get up and be dressed as usual." I had her promptly dropped back into bed and kept there. She seems bright, but is very weak; drags the feet in walking, the left the most—may be due to extreme weakness. Plantar reflexes normal; cannot develop the patellar reflex on either side, but the knees are held rigid. The child was restless during the night, but slept much more quietly than she has

done for some time. The attack was immediately followed by enuresis, which had not occurred previously, and which disappeared in one week, at which time the temperature was normal. Recovery perfect.

The above case has been given at length because of the impossibility of making an absolute diagnosis at this time. It was a typical mode of onset of cervical poliomyelitis anterior, and the possibility that this may be the ushering-in of any such attack should be kept in mind. It is also possible that energetic treatment at the *very* onset would, by the relief of the congestion of the spinal centres, prevent the occurrence of the paralysis. The length of the convulsion would have been shortened by the immediate administration of chloroform, and the effect kept up with bromide and chloral.

The leech was applied to the base of the brain on account of the great heat of the head and flushed face, indicating cerebral congestion. This is the third case of intense cerebral congestion in which such an application of leeches has been followed by a rapid fall of temperature and relief of other symptoms. Of the other cases one was a boy of 10 years, who, when I was first called in, had a sublingual temperature of 106.2°, pulse 160, respiration 40. Twenty-four hours later the temperature was 106°, pulse 120, respiration 44. There was opisthotonos, hyperesthesia, the tâche cérébrale, and photophobia; the child cried and was extremely irritable. The leech was left on, but did not bite well—this was 9 P.M.; but the bleeding continued, a little trickling stream, for nine hours. The child slept well from 10:45 P.M. until 7 A.M., getting awake only twice, asked for a drink, said he felt well, and at once fell asleep. The next morning the skin felt cool and pleasant, the muscles were relaxed, the opisthotonos much less marked. The child seemed bright and said he felt well. In this case the coil cap supplied with ice water was used. It is for children—and they all bear cold badly—in every way preferable to an ice cap; the cold is not so intense as to cause discomfort, and can therefore be left on constantly.

The third case was a girl of 18 years. The family thought that paralysis was developing, and I was sent for. She had gotten up feeling all right, but soon began to feel a tingling and numbness in the extremities. A flexion of the finger was followed by that of the wrist and elbows. The muscles of the face

twitched, and, although she tried, she could not speak for ten minutes. There was also dyspnea. The flexion continued for two hours.

Since having these cases I have not had a case of poliomyelitis in the acute stage to treat. But from the analogy, and since we know that the inflammation is always the greatest at the lumbar and cervical enlargements, I believe that leeches, with the ice bag to the spine, will afford the quickest and most certain relief. Calomel relieves the congestion of the liver and kidneys, and so has an antiphlogistic action.

Remembering that in Cordier's epidemic there was no perspiration in the cases that ended fatally, while it was profuse in those who recovered, and from my own personal observation of the *very* profuse perspiration in three favorable cases, if this symptom were absent diaphoresis should be induced as rapidly as possible.

2. Treatment of the Chronic Stage.—Of the first importance, even for its effect on the affected leg, is the improvement in the general health; and all hygienic conditions should be enforced. Remembering the tendency to gastro-enteritis and constipation, especial regard must be had to the diet and regulation of the bowels. Plenty of exercise in the open air, and two months in the mountains or at the shore, is followed by the most beneficial results. The most striking improvement I have seen in so short a time in any of these cases was in a child on her return from six weeks in the country. The pallor was replaced by a good healthy glow, the weight was markedly increased, an obstinate constipation had entirely disappeared, the limbs had increased in girth, and the voluntary movements were better.

The tendency to inflammation of the respiratory tract, enlargements of the glands, and obstinate skin affections is best overcome by the use of cod-liver oil, quinia, and iron.

"In all cases where the trunk muscles are weak, even in slight degree, bronchial catarrh must be guarded against with great care. In such cases the muscles of respiration are weakened, and, although normal breathing may not be impaired, the diminution in strength may render an acute bronchial catarrh rapidly fatal, and this even months after the onset of the paralysis."

3. Local Treatment of the Paralysis.—In proportion to the severity and extent of the paralysis there is entire or partial

loss of function in some of the groups or in the entire extremity. Hence the circulation is impaired and nutrition interfered with, and we have atrophy as a result.

All our efforts are directed toward the restoration of function. To this end are recommended heat, massage, stretching, electricity, and a suitable brace.

The last is of the greatest importance, for by it the limb is kept in proper position, stretching of the paralyzed muscles and displacement of joints with relaxed ligaments are prevented. Further, a child who cannot walk at all without it is able to walk with comparative ease with its brace, and so not only is the affected limb exercised, but the whole body benefited.

But, although the brace is the one most important feature of the treatment, its usefulness is limited. We will take one of our cases. There is complete paralysis of the right anterior tibial groups of muscles and the tibialis posticus, with partial paralysis of all the groups below the knee and of the quadriceps extensor. The brace arrests the deformity, equino-valgus, so there is no "foot drop," and the patient walks fairly well on the level ground, but he cannot go up-stairs at all. Without the brace he cannot raise the right foot off the floor; he walks slowly with a sickle swing, the anterior of the right thigh being supported by the hand. There is total loss of the patellar reflex and contraction of the tendo Achilles, atrophy of two inches of the calf and one and one eighth inches of the thigh. The foot and leg are cold, and the nails have not grown since the attack three years ago. This patient has worn a brace from another institution for the past year and a half.

Here evidently, before much could be gained for the groups on the anterior of the thigh, stretching the tendo Achilles was necessary. At the same time attention was given to the improvement of the general health. For the increase of the circulation by means of dilatation of the blood vessels, hot salt baths to the affected extremity just before retiring, and artificial heat at night, were ordered; massage of the limb with stimulating liniments night and morning. Faradic excitability was almost wholly lost, so galvanism three times weekly was used. And in just such cases as these electricity accomplishes what no other agent can, i.e., the contraction of the muscle fibre, and so enables it to perform its physiological function. Not only does it increase the circulation through the muscular

contractions, but these same artificial contractions act on the ganglionic cells, and in this way the destruction of the cells is arrested and their function is restored. Of course if too strong a current is used or the application too long continued, actual harm may be done by the exhaustion of the ganglionic cells.

Another important point is the position and application of the electrodes. The positive electrode should be large, five by ten centimetres, and for the lower extremity be placed over the lumbar ganglia and held firmly in place by a belt. The "burning" complained of here will be wholly obviated by covering the wire gauze with a thickness of a half-inch of lint, which then is practically a warm, moist poultice, and therefore a good conductor of electricity. The negative electrode is less painful when covered with lint and absorbent cotton than with sponge. The mixed current, combined galvanic and faradic, is much less painful than either galvanic or faradic, but does not produce as powerful contractions as the interrupted galvanic. This current is substituted as soon as it is found efficient.

As a result of two and a half years' treatment, average visits at hospital nine times monthly, the child, instead of having to be carried up the stairs to the Elevated, goes up easily. The nails on the affected foot grow rapidly. The patient can raise foot off floor, but has only partial quadriceps power, with diminished patellar reflex; he can bring foot up to level of trunk, but to do this sharply flexes the knee. The leg and foot are much warmer. There is still almost complete loss of power in the anterior tibial groups, and while there has been an increase of girth of three-fourths of an inch in the healthy calf, the calf of paralyzed leg remains the same size; increase of healthy thigh five-eighths inch, of only one-eighth inch in the paralyzed thigh. Faradic irritability is diminished, but a strong current produces good sharp contractions of all the groups except the anterior tibial and tibialis posticus. The child was dangerously ill for some weeks last summer with enteric fever, and the general health is still greatly impaired.

(To be continued.)

A CASE OF TUBAL PREGNANCY WITH SOME PECULIARITIES.

ABDOMINAL SECTION-RECOVERY,

 ${\rm B}{\rm Y}$

H. MEEK, M.D.,

Gynecologist to the London General Hospital,
London, Ontario.

(With two illustrations.)

August 1st last a patient was referred to me by Dr. McNeill with the following history: Mrs. P., et. 38 years; married twelve years; four living children and three dead; last child twenty months ago; three miscarriages; last miscarriage at three months, September, 1892. Had always enjoyed excellent health till the present illness. Following miscarriage in September, 1892, she felt perfectly well, and menstruated regularly for three or four days every four weeks till April, 1893. April 6th, 1893, she menstruated for one day only. There was no menstrual period in May following. She began to have all the symptoms of early normal pregnancy and believed herself pregnant. On June 1st, while going up-stairs, she suddenly felt faint. There was no pain accompanying the faintness, and she soon recovered. On June 9th, while putting up curtains, she was suddenly seized with severe, agonizing pains in left side of abdomen. Her physician was called, and diagnosed threatened abortion and gave opiates for relief of pain. There was no flow at this time. Three days after this, without much flow, a membrane was expelled which she thought was part of afterbirth. Following this for three weeks she was confined to bed from severe attack of peritonitis. There was also a bloody discharge from vagina each day from this period up to the day she consulted me. The discharge was not large in quantity, very dark, not clotted, consistence of thick jelly, with a lochia-like odor, but never at any time fetid. She had been up and about for some time previous to consulting me, but suffering from severe paroxysms of pain after exertion and at night. Countenance of patient had appearance of one in constant suffering.

Her temperature was 99½° F.; pulse rather frequent and weak; no appetite; bowels regular, but pain with stools. She said she noticed lump in left side of abdomen shortly after supposed miscarriage in June, and this lump had been increasing in size since.

Examination of Abdomen.—A lump could be felt in hypogastric region, just above the pubes, extending from a little to right of median line outward on left side above Poupart's ligament nearly to crest of ilium, and upward in median line halfway to the umbilicus. It had something of the feel of a pregnant uterus displaced to left side, but not the regular outline of pregnant uterus. Keeping hand on lump for some time, distinct contractions could be felt, like intermittent contractions of pregnant uterus. Patient herself could feel a "hardening-up of lump," as she expressed it, at intervals. The lump was close down behind pubes and Poupart's ligament, on left side. By dipping fingers down between it and pubes it could be lifted up and brought more toward median line. Pulsating vessels could be felt on its surface on pressure. It was tender on pressure and lifting it up caused pain. Auscultation negative.

Digital Examination per Vaginam.—Cervix pointing forward against anterior vaginal wall; soft feel; os open, admitting index finger nearly to os internum; body of uterus turned back and to left side. A little to right of body, low down, right ovary could be felt quite distinctly, somewhat enlarged and tender on pressure, but movable. In front of cervix and body, separated by a narrow sulcus, a rounded, rather soft, somewhat elastic lump, which resembled somewhat in feel anteflexed body of pregnant uterus, projected downward close to anterior wall of vagina between pubes and cervix. Bimanually this lump could be felt extending outward to left and upward half-way to umbilicus. The entire mass appeared to have a close connection with uterus above and to left. It could not be separated from uterus. When lifted up, the uterus moved with it, cervix being tilted forward and body back. Mucous membrane of vagina and cervix was bluish in color, and bloody discharge oozed from os. Breasts were enlarged and contained milk.

From history and examination it was difficult to say whether the case was one of extra-uterine pregnancy or pregnancy in one horn of a double-horned uterus. Another question that required answering, if patier were pregnant, was whether fetus was dead or alive. I urged her to enter hospital at once, where I could have her under observation for a time, but she said she could not do so for a week or two.

August 7th, with her physician, Dr. McNeill, I examined patient at her own home under anesthesia, but was not able to make out anything more definite than at previous examination. At this examination, however, I passed sound into uterine cavity and found that it went back and to left two and a half inches. I also passed sound into bladder and found that it lay under the mass in front. Pains and discharge had continued about the same since previous examination.



Fig. 1.-From plaster cast of tubal pregnancy. Anterior view.

August 17th: Has been in St. Joseph's Hospital since August 14th; thinks abdomen and breasts have increased in size since last examination; thinks she has felt life. Examination.— Lump larger; intermittent contractions distinctly felt through abdominal wall. Dr. Ferguson, who was with me at this examination, could also feel intermittent contractions distinctly. Breasts larger than at previous examination and contained milk. Discharge continues about the same. Pains less, and feeling much better generally. August 21st: Dr. Eccles, who was with me when I examined patient to-day, could also feel intermittent contractions distinctly. August 31st: Since August 21st has had occasional pretice strong pains, like labor pains,

accompanied and followed by some discharge. Breasts are getting flabby. Lump has diminished in size, feels harder and less regular in outline, and has sunk lower in pelvis. Intermittent contractions not felt. September 21st: Since last examination discharge less constant, but lochia-like odor and other characters the same. Occasional pains like labor pains. Very slight reduction in size of lump. No elevation of temperature, and general condition good.

Operation September 21st, 9 A.M. Long median incision. No parietal adhesions and no difficulty getting into peritoneal cavity. Came directly on mass in front and to the left side;

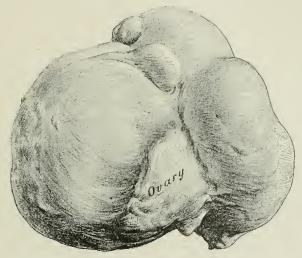


Fig. 2.—From plaster cast of tubal pregnancy. Posterior view.

adherent omentum and coils of intestine covering lump; some small blood clots amongst adherent coils of intestine and in front between lump and bladder. I separated adhesions down behind lump with fingers till I could feel fundus of uterus, which was retroverted and to the left side, lying under lump. I could then feel that lump was largely dilated, left tube twisted on itself and lying above and in front of uterus. I did not have much difficulty in shelling it out and bringing it up into abdominal wound. There was a very good broad-ligament pedicle, which I ligated with Staffordshire knot, and removed the lump without rupture. Right tube was apparently healthy, but right ovary was cystic, with only a thin shell of ovarian

tissue forming wall of cyst about the size of an English walnut. On account of diseased condition I removed it with tube also.

Examination after removal showed whole tube on the left side very much dilated, with wide, pouch-like dilatation of fimbriated extremity, and with ovary flattened out and plastered over fimbriated end like a cap, covering in and closing peritoneal orifice. The appearance of dilated tube with ovary plastered over fimbriated end is shown in illustration. The dilated tube, before opening into it, measured from uterine cornua to ovary twelve inches; wide, dilated pouch measured eight and one-half inches in circumference. On opening into dilated tube I found pouch-like dilatation filled with about ten ounces of liquid blood and soft blood clot, while that part of tube nearer uterus was filled with placenta and some tarry, jelly-like blood having the same appearance and odor as that discharged from vagina. No trace of fetus could be found; it had evidently been digested and absorbed.

It is quite probable that in this case the gestation sac in tube had ruptured and fetus had been expelled through peritoneal orifice of tube into peritoneal cavity about the end of second month and had been digested. Peritonitis with adhesions closed the fimbriated end and plastered ovary over it. Hemorrhage continuing at intervals caused dilatation of this end of tube into wide pouch shown in illustration. It was this pouch-like dilatation that could be felt from vagina behind pubes and Poupart's ligament. The uterine orifice of tube being open, some of the blood found its way into uterine cavity by peristaltic contractions of tube. This would account for the daily discharge of jelly-like blood. The increase in size for a time after I first saw patient can be explained by exudation from peritonitis and slow hemorrhage going on in tube; the diminution in size later on, by absorption of exudation and effused blood.

Peculiarities.—1. Situation above and in front of uterus, between it and pubes, the usual situation being behind uterus.

- 2. Uterus being retroverted behind mass and on same side, instead of being displaced to opposite side.
- 3. The intermittent contractions, which were so like contractions of pregnant uterus as to lead one to think it a case of pregnancy in one horn of a double-horned uterus.

So far as I can find from literature at my disposal, the situa-

tion of tube sac, above, in front, with uterus back and on same side, is unique.

Remarks.—No flushing or drainage was used in operation. Wound healed by first intention, patient making an uninterrupted recovery, temperature never reaching 100° F. She left hospital, feeling quite well, between three and four weeks following the operation.

331 Queen's avenue.

TRANSACTIONS OF THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

ABSTRACT OF THE PROCEEDINGS OF THE SIXTH ANNUAL MEETING, HELD AT NEW ORLEANS, LOUISIANA, NOVEMBER 14TH, 15TH, AND 16TH, 1893.

First Day—Morning Session.

The President, Dr. Bedford Brown, of Alexandria, Virginia, in the Chair.

An

ADDRESS OF WELCOME

was delivered by Dr. Ernest S. Lewis on behalf of the local profession, which was responded to by President Brown.

The first paper read was a memorial address on

EPHRAIM McDOWELL,

by Dr. L. S. McMurtry, of Louisville, Ky.

The author said that the galaxy of illustrious names would be incomplete without that of McDowell, the father of ovariotomy and the pioneer of abdominal surgery, which in modern

times has grown to such grand proportions.

In the year 1852, twenty-two years after the death of Mc-Dowell, Prof. Gross, in his report on Kentucky surgery to the Kentucky State Medical Society, presented a sketch of the life of this eminent surgeon, with a detailed account of his original surgical work. This sketch was subsequently incorporated in Gross' "American Medical Biography," published in

After giving a sketch of McDowell's life, Dr. McMurtry then referred to his first ovariotomy, on Mrs. Crawford, and noted some points with reference to his operative technique. The

operation in this case was done without an anesthetic. The incision was made to the left of the median line, about three inches external to the rectus muscle, and was nine inches in length. After opening the peritoneum he first tied the pedicle with a strong ligature, and then cut open the tumor and removed its contents. He then divided the pedicle and removed the sac. As soon as the incision was made into the abdomen, he states the intestines rushed out upon the table, and were not replaced until the operation was completed, which, he says, "occupied twenty-five minutes." He then turned the patient upon the left side to allow all fluids to escape. He closed the incision with interrupted sutures, and brought out the ligature attached to the pedicle at the lower angle of the wound.

In reporting his cases he omits mention of the material composing the ligature, and Dr. McMurtry had been informed by a friend of McDowell, now dead, who was a great deal about Mc-Dowell's office in his boyhood, that the ligatures used were made of shoemaker's thread, and waxed thoroughly before being used. Adhesive strips and bandages completed the dressing, and, in the author's language, he prescribed "a strict observation of the antiphlogistic regimen." The special features of the technique are: 1. The incision was made through the muscular layer of the abdominal wall three inches external to the rectus muscle. 2. The cyst was not evacuated until after the pediele was tied. 3. An effort was made to cleanse the peritoneum of fluids. 4. Drainage was sought, as well as escape of ligatures, by bringing the ligatures out at the lower angle of the incision. 5. The operation occupied only twenty-five minutes, expedition being more the result, doubtless, of the want of an anesthetic than otherwise.

In his report of his second case McDowell used this language, "I laid her side open." In his third case he adopted the median incision, saying in his report of this case, "I changed my place of opening to the linea alba." In all of his cases he ligatured the pedicle before separating the adhesions or tapping the tumor. In his third case he mentions that the ligatures could not be released for five weeks, at the end of which time the cord was taken away.

Dr. Howard A. Kelly, of Baltimore, Md., read a paper entitled

THE DIAGNOSIS OF PELVIC INFLAMMATORY DISEASES,

in which he called attention to certain common sources of error in making diagnoses of pelvic inflammation. An erroneous conclusion is often reached in these cases, both by general practitioner and specialist, by relying for the diagnosis upon such symptoms as dysmenorrhea; more or less persistent pain in the

pelvis; attacks of pain confining the patient to bed, diagnosed as "peritonitis"; difficult locomotion; cachexia (due to morphia habit); tenderness on pressure over the right ovarian region; and extreme tenderness at the vault in a vaginal examination.

Such a group of symptoms frequently characterizes a false or pseudo-pelveo-peritonitis, in which there is actually no demon-

strable lesion of any pelvic organ.

In order to make a diagnosis of true pelvic inflammatory disease, the inflamed structures must be examined directly by touch.

The various subjective symptoms just detailed must be regarded as of secondary importance in reaching a diagnosis.

Even the patient's observation that she has passed a quantity of pus cannot be relied upon, unless the pus is seen by the physician, as patients often mistake muco-purulent discharges from the uterus for the emptying of an abscess.

Fever, and especially recurrent attacks of fever, are valuable aids in making the diagnosis; but fever is generally absent, even

in abscesses where the pus is encapsulated.

The direct examination, the sole test, is made by the vagina, or by the vagina and lower abdominal wall, and the diagnosis of pelvic inflammatory disease is made when a definite, hard, resisting mass is felt on one or both sides of the cervix. Through an empty rectum these masses are still more distinctly outlined. When the disease is not quite so evident a bimanual examination through the rectum and abdomen should be made, carrying the index finger of the lower hand above the rectal pouch behind the uterus and laterally out on to the broad ligaments. The most minutely accurate examination of the pelvic organs which can possibly be made is called for when the ovaries and tubes are enclosed in delicate bands of adhesions which allow considerable mobility to structures not enlarged.

This is accomplished by the trimanual method by vagina, rec-

tum, and abdomen simultaneously, under anesthesia.

Dr. Kelly exhibited his corrugated tenaculum to facilitate this examination. The point of the tenaculum is caught in the anterior lip of the cervix, which is drawn down to the hymen, and the tenaculum is held between the third and fourth fingers and the ball of the thumb, while the index finger is introduced into the rectum, and, aided by the hand making pressure above, giving a plane of resistance, he is enabled to examine minutely the posterior surface of the uterus, and all surfaces of the ovaries and tubes, detecting the slightest adhesions binding these organs down.

The examination under anesthesia is a matter of the utmost importance and not sufficiently appreciated. Withoutanesthesia the most accurate examinations are impossible; it is, therefore, a

sine qua non to the diagnostician.

Résumé.—In conclusion, Dr. Kelly recapitulated the important points he wished to establish, as follows:

1. His remarks are addressed for the most part to the general

practitioner.

2. The history of the patient, and sensitiveness over the ovarian regions, whether by deep abdominal or vaginal palpation, can but rarely *per se* establish a diagnosis of pelvic inflammatory disease.

3. An attempt to make a diagnosis without directly palpating

the disease is at best but more or less clever guesswork.

4. The diagnosis can be made with certainty when resisting masses are felt choking the posterior half of the pelvis at the

sides of and behind the uterus.

5. It is possible in this way to mistake a retroflexed fundus, an extra-uterine pregnancy, a myoma, or a carcinoma for inflammatory disease. The error, however, will be in the right direction, and not to the injury of the patient when she comes into the hands of the specialist.

6. For a more delicate appreciation of the exact condition of the pelvic organs, and in most cases in order to make the diagnosis at all, a bimanual examination by rectum and abdomen,

under anesthesia, is indispensable.

7. The trimanual examination, acting at the same time by rectum, vagina, and abdomen, is the most delicate method of all, serving to detect the slightest irregularities in uterus and ovaries, as well as the most delicate adhesions.

8. Finally, constant practice, utilizing every available chance, will alone enable a man in general practice to appreciate these

points, so simple to the trained touch.

Dr. C. Kollock, of Cheraw, S. C., followed with a paper entitled

THE CONSERVATIVE TREATMENT OF PYOSALPINX.

He said in cases of pyosalpinx much caution and a very careful and rigid examination are called for to determine the cause of the presence of pus, the length of time it has been there, and the condition of the walls of the tube in which it is found; attention should also be given to the peritoneum and ovaries; but, above all, there should be the strictest inspection of the endometrium, a disordered condition of which contributes much to

the production and continuance of pus in the tubes.

Within a year or two changes have been made in the treatment of pyosalpinx, and conservatism now enters largely into its management. Men of high position in the profession are more decidedly agreed that a moral obligation rests upon us to relieve patients without the sacrifice of any organ, or part of one, when this is compatible with safety. Recently Polk, Pryor, Krug, Boldt, and Dudley had reported to the New York Obstetrical Society a number of cases of pyosalpinx treated by

the conservative method now in vogue. This treatment, when faithfully carried out by curettement and antiseptic divulsion, has not only been successful in saving the tube and ovary on the non-affected side, but in several instances the diseased tube was entirely relieved of the presence of pus. That many cases of pyosalpinx have been accurately diagnosticated and radically cured without the mutilation of any part of the sexual organs, is well authenticated. Dr. Kollock's experience, while limited compared with that of others, had been sufficient to convince him that the conservative system of practice is bringing us to that period when the mutilation of women, once supposed to be necessary, should cease.

He then reported a few cases of pyosalpinx which had fallen into his hands, the happy termination of which had placed him under obligations to the pioneers in the conservative treatment. All but one of four cases were relieved entirely without resort-

ing to celiotomy.

Dr. George J. Engelmann, of St. Louis, emphasized the importance of administering an anesthetic, in examining patients with pelvic inflammatory disease, before serious operative procedures are entered upon. It was not alone the anesthetic,

however, but the practised touch.

Dr. Joseph Price, of Philadelphia, alluded to "dropsical tubes" as being a group of cases that puzzled the practitioner from a diagnostic point of view, and later surgically. Angry pus cases, while acute in their early history, were simply eases to be dealt with surgically. The attacks of pain were numerous, and fixation and tenderness characteristic symptoms. Everything in the pelvis was board-like, and when the surgeon got into the abdomen from above it was difficult to distinguish the uterus from the appendages, and vice versa. These were trying cases to deal with.

Dr. John D. S. Davis, of Birmingham, Ala., said he was in favor of evacuating pus wherever it was found in the body. There were, however, some cases in which pus could be removed without sacrificing the ovaries or tubes. As to the use of an anesthetic, he considered it absolutely essential in the examination of doubtful cases, but where the diagnosis is plain it

is not necessary.

Dr. R. B. Maury, of Memphis, said the great difficulty in the class of cases referred to by Dr. Kollock, in which there was pelvic inflammation associated with muco-purulent discharges from the uterine cavity, was to decide whether there is pyosalpinx. We have what is denominated endometritis, associated with it normal discharges and exudation in the pelvis, but Dr. Maury said he was at a loss sometimes, with the most careful diagnostic measures, whether under ether or without it, to form in his own mind an accurate picture of what the precise state of things is in the pelvis. The rule he had laid down in

the treatment of such cases is, if they are acute, non-puerperal or puerperal, that the woman is entitled to a certain period of rest and other measures non-surgical before deciding upon a ra-

dical operation.

Dr. W. E. B. Davis, of Birmingham, Ala., believed that, in the examination of patients, it is exceedingly difficult in some cases to make an accurate diagnosis without an anesthetic. However, there were women who could stand the examination well without it.

In regard to endometritis, by judicious and careful curettement he believed many patients can be saved the necessity of an abdominal section. The trouble is that practitioners often denounce one procedure and uphold another without outlining the indications for a certain position. It is very important to

cure the endometritis before it spreads to the tubes, etc.

Dr. R. M. Cunningham, of Pratt City, Ala., was inclined to look upon endometritis, in the vast majority of cases of disease of the appendages, as the *fons et origo* of the whole affair, and he believed that the operation which has been systematized and popularized by Dr. Polk is a safe, conservative, and reliable procedure. Furthermore, in the hands of the general practitioner it would relieve many of those cases that go to the laparatomist.

Dr. Bedford Brown, of Alexandria, Va., said the mobility of the uterus and its fixations were questions of great importance in diagnosticating pelvic inflammatory disease.

Afternoon Session.

THE INCISION IN ABDOMINAL SECTION—HOW TO CLOSE IT— POST-OPERATIVE COMPLICATIONS ABOUT IT.

Dr. Joseph Price, of Philadelphia, read a paper on this subject. He said the question that most vitally concerns surgical and gynecological work was, How can the mortality be reduced? Surgical judgment and surgical fingers repeatedly determine the

issue of life or death.

The Incision.—We have nothing from which we can ever approximately determine to what extent the length of the incision influences the mortality. The statistics of comparative results would not prove satisfactory, for the reason of the entry of so many other compromising elements—adhesions, their character, extent, and locality. That the incision exercises a greater influence than is generally recognized or admitted he entertained little doubt. In his own experience he finds the balance of both convenience and safety to lie with the short incision. The short incision narrows the limits of hemorrhage. It is safe to begin with a small incision, and where the size and

character of the tumor or complications present require a larger one it can easily be made. Very much abdominal work can be done through an opening admitting only two fingers. The reliance of the abdominal surgeon must be largely on educated fingers. In the majority of cases an operation can be done through a small incision without the operator or spectators seeing viscera. Universally adherent, irreducible, or solid tumors require a long incision. In the majority of cases, to so enlarge the opening as to obtain a view of the parts we augment the risk of ventral hernia and provoke tedious convalescence.

The importance of a perfect closure of the incision has only recently received that attention it deserves. The effort should be to approximate as nearly as possible normal conditions, anticipating and dealing with all existing or possible complications with scrupulous minuteness and care, thus guarding against those accidents which are too frequent. He would not pretend to suggest uniform procedures to be carried out in all cases, as each operator has his own way and does his own work best that way, and it would not be possible for him to apply the methods of others safely and successfully without special training. He was satisfied that the exposure and manipulation of the incision, as well as the peritoneum, is harmful. Incisions bathed in pus and filth, and freely manipulated, often refuse to unite. Suppurating wounds are largely due to careless closure or to tight sutures including too much tissue; tight suturing is too common and has destroyed life in many feeble subjects. Suppuration due to tight suturing, and stitch-hole abscesses, in all sections where they do not result fatally, prolong convalescence. Cases were cited in point.

Through-and-through suturing, including all structures, more of the central structure than skin or peritoneum, with either silkworm gut or pure silk, gives and continues to give the most satisfactory results. Silkworm gut seems to be the favorite material at present, as it possesses all the natural and essential qualities of a suture, is small, strong, and non-irritating—the three cardinal virtues of all good suturing material. Terracing sutures has nothing to recommend it. Retraction of skin and peritoneum by the introduction of silkworm sutures gives inclusion to more central structures and the least possible tension on skin and peritoneum. Keith, Tait, and Bantock all use a fine, straight needle, and their work has been about perfect. The use of large, curved cutting needles is harmful. Their use primarily favors hemorrhage and secondarily stitch-hole ab-

scesses.

Dr. Kelly thought that long incisions have little or nothing to do with mortality, except in an indirect way. Where there are many adhesions a long incision is necessary. Handling of the viscera in pre-antiseptic days increased the chances of suppuration and consequently of peritonitis and death. The chances

of infection, he believed, are greater with a long incision. Hernia comes from improper closure of the abdominal wall or the use of the drainage tube, weakening the abdominal wall at one

of its points.

Dr. L. S. McMurray, of Louisville, demonstrated his method of suturing on the board. He brings peritoneum to peritoneum, muscular structure to muscular structure, fascia to fascia, skin to skin, and said the smaller the quantity of interposing material that we have between the tissues that are to be brought together, the better. He disagreed with Dr. Kelly that the drainage tube is the cause of hernia after closing the incision.

Dr. R. B. Maury, of Memphis, favored the silkworm-gut suture. His experience covered nearly three hundred sections, and he had simply used the through-and-through suture. He had had almost no abscesses and the fewest possible number of herniæ.

Dr. T. J. Crofford, of Memphis, said it was considered that all herniæ resulting from abdominal section were due to failure to get union between the opposing layers of transversalis fascia. He used a long, curved needle instead of a straight one. With it he can put in stitches in one-third of the time he can with the ordinary needle. He had used it in upward of two hundred sections and had not had a case of hernia to follow one of them. He had also had very few stitch abscesses.

Dr. Price, in closing, said there was an immense amount of theory about the matter of long and short incisions, and there was a tendency on the part of some to brush aside pre-antiseptic work. Notwithstanding this, however, some of the old back-numbers or hayseeds, so-called, had as good results in their day as are obtained in some of our hospitals to-day. He urged

great caution in the terracing method of suturing.

Dr. George J. Engelmann, of St. Louis, Mo., read a paper entitled

THE VAGINAL ROUTE, AS COMPARED WITH THE ABDOMINAL, FOR THE REMOVAL OF PELVIC VISCERA.

Dr. Engelmann desired to call the attention of the Association to the advantages offered by the vaginal route for many of the operations, and especially some of the more dangerous now practised, by means of abdominal section, for the removal of the uterus and appendages, and especially in suppurative cases with multiple pus centres. It was vaginal hysterectomy for malignant disease of the uterus which first paved the way to the more extended use of the vaginal route for such operations. He pays a fitting tribute to American surgery when he says that this, like others of the great operations of recent times, emanated from a Southern surgeon. In New Orleans, in 1846, Dr. Dubourg fully described this operation, which he had repeatedly practised with success since 1829. But it was again forgotten until revived

within the last decade, and vaginal hysterectomy for malignant disease of the uterus is now everywhere an accepted operation, which is rendered especially safe and rapid by the forcipressure method of Péan; and it was the French surgeon who extended the field to the removal of other contents of the pelvis by the vaginal route, resorting to the piecemeal removal, the morcellement, for the extirpation of masses too large to be delivered in their entirety through the vaginal opening. The leaders in this new departure are Péan and Ségond of Paris, Doyen of Rheims, and Jacobs of Brussels, and followed for the present by the French school only. In Germany and England these operations are practised but little, if at all, and in this country the vaginal route is limited to the removal of the uterus, vaginal hysterectomy for malignant disease, and perhaps for prolapse or inversion.

Isolated cases of removal of prolapsed ovaries resting on the vagina, or small and conveniently situated ovarian cysts, through the vaginal opening, are now and then performed everywhere, but this is a very different matter. The surgeons who are leading in this field vary somewhat in method and in the extent to which they apply it, but the vaginal route now serves them: 1. For hysterectomies for the removal of malignantly diseased uteri and moderately enlarged uteri, for hysterectomy by morcellement for uterine tumors which do not extend above the navel. 2. For all bilateral removal of appendages with diseased uteri. 3. For the treatment of pelvic suppuration of all kinds. 4. Jacobs even prefers the vaginal method for certain cases in which the appendages on one side only are to be removed. Péan limits hysterectomy by morcellement to benign growths and to all cases of pelvic suppuration treated to-day by laparatomy; whilst Ségond still prefers laparatomy when operation is indicated in unilateral cases, above all in unilateral salpingo-ovaritis when non-suppurative.

The indication given by Terrier, and indorsed by Jacobs, is first to resort to the vaginal route for cases in which suppurative pelvic peritonitis has returned after laparatomy has already been practised; secondly, suppurative pelvic peritonitis with fixation of the uterus and multiple pus sacs; whilst laparatomy may be resorted to in enucleable, non-suppurative salpingoovaritis. It is the operation of choice in pyosalpinx with serious affection of neighboring tissues, and a necessity in pelvic suppuration with multiple centres, in which hysterectomy by morcellement gives by far the best chance for a cure. These operations, when removal of the uterus accompanies them, are in their first stages identical with vaginal hysterectomy, as is generally known, but forcipressure aims to take the place of the suture to permit rapidity of operation. Diseased or greatly enlarged uteri and tumors are removed piecemeal with no appreciable loss of blood, the spurting vessels being controlled by

hemostatic forceps or by the forceps of Péan, or clamps, and cutting in the mass of tissue, likewise following the compression of superimposed tissues by powerful volsellæ constructed for the purpose. In the same manner non-enucleable masses are removed throughout the pelvis. The success of the operation in the hands of its enthusiastic advocates is surprising. Péan reports sixty cases without a death, while Ségond, meeting many desperate cases, has four deaths in thirty-two; Doyen two in fifty cases of vaginal removal of fibroids, and four in twenty-eight extirpations by morcellement of uterus, appendages, and pyosalpinx complicated with fibroids or pelvic suppuration; and Jacobs, of Brussels, one hundred and twenty-five cases, with only two deaths, which cannot in any way be attributed to the operation itself. In this country the results of hysterectomy, as practised for the removal of cancer of the uterus, are not good. Baldy recently published four cases with two deaths, and Montgomery twenty with one death. Previously reported statistics have been more favorable.

The advantages of the vaginal route are the rarity, if not absence, of shock in cases in which we would have to treat it if the abdominal method were resorted to; rapidity of operation, by reason of the forcipressure method and the total absence of ligature or suture; the nearness of the parts to the finger; and, in the aggravated pus cases, guarding of the abdominal cavity from the pelvis proper or the field of operation by the adhesions and inflammatory products, which form a perfect barrier. It seems the natural route for the reaching of parts below the pelvic brim. There is, after operation, perfect drainage established by the forceps and the dressing per vaginam, so that there is no possible stagnation. Recovery appears to be more rapid and more satisfactory than by the abdominal method, the forceps being removed in forty-eight hours, the patient sitting up on the fifth or sixth day, and moving about between the tenth and fourteenth days when cicatrization is completed.

The removal of tumors extending as high up as the umbilicus can be accomplished only by the expert operator, and such cases are left to his choice; but vaginal hysterectomy by morcellement should be resorted to in bilateral pyosalpinx where foci or centres of infection often remain in the endometrium or in the stumps of the tubes, and by all means if multiple pus centres exist in the pelvis. These are the cases in which the superiority of this method over the abdominal is most evident. If the entire pelvis is infiltrated, all that is possible must be removed; but, by reason of the excellent drainage, no harm is done if an adhe-

rent piece be left here and there.

In concluding, Dr. Engelmann paid a high tribute to the young Brussels surgeon, Dr. Jacobs, whose skill and success had demonstrated to him the advantages of this method, and he cites even cases in which unilateral pyosalpinx had been removed

without combining hysterectomy, and in which pregnancy and healthy labor followed, indicating that hysterectomy is by no means a necessary accompaniment of the vaginal route. The writer urged a fair trial to be given this method by the American gynecic surgeon, and pledged himself to resort to it in all possible cases, but warned his confrères not to attempt operation without proper instruments, the long and short retractors which are necessary, and, above all, the powerful volsella and long-bladed hemostatics of Péan for forcipressure.

Dr. James A. Goggans, of Alexander City, Ala., read a paper entitled

THE DIAGNOSIS OF SOME ABDOMINAL TUMORS SUPPOSED TO BE OVARIAN.

He said the first requisite of the abdominal or pelvic surgeon is to acquire the ability to make a diagnosis. Our text books often lead one to believe that this was quite an easy thing to do, and he had noticed that a few writers had, in referring to their diagnoses of a series of abdominal sections for different diseases, stated that no mistake in diagnosis was made in the whole series. The author's experience did not lead him to believe that the diagnosis of many abdominal tumors is always such an easy thing to do. He then reported a few cases which had come under his observation which served to illustrate the fact that the diagnosis of many cases is often difficult, and in some quite impossible.

A woman, 25 years of age, was taken with pelvic pains after the birth of her first and only child. This pain continued for two years before the abdomen began to enlarge, and at the time he saw her and removed the tumor the abdomen was extremely distended. The physician in charge had tapped her three times and had withdrawn large quantities of thin fluid, and was very positive in his diagnosis that an ovarian cyst existed. The abdomen was so full of fluid that all the landmarks were obliterated. Dr. Goggans consequently could not make a positive diagnosis. However, he recognized it as being some obscure form of pelvic disease and opened the abdomen for its removal, finding a large quantity of ascitic fluid, which escaped, when a small dermoid cyst was found floating in the pelvis. The patient made a perfect recovery.

Dr. John T. Wilson, of Sherman, Tex., read a paper entitled

DOES GONORRHEA IN THE FEMALE INVARIABLY PREVENT CONCEPTION?

He said it had long been known that gonorrhea in the female was sometimes attended with complications that proved trouble-some and of serious import. Authors had for many years been describing endometritis, metritis, inflammations of the tubes, ovaries, and peritoneum produced by an ascending specific vagi-

nitis, these structures being invaded by the poison slowly creeping up through the cervix, involving first the mucous membranes in its tract, and extending by continuity of structure to the deeper tissues. The more serious results, however, were not appreciated nor so well understood until within recent years, when laparatomy became so common an operation and the pathology of the more important sequelæ were studied from the specimens themselves.

For many years ovaritis, inflammations of the Fallopian tubes and endometrium, were known to be causes of sterility, and yet the important part which gonorrhea played in this condition was not so generally accepted as it is at present, nor until long after Noeggerath published his views in Germany in 1872, and in this country in 1876, directing attention to the serious results attending an attack of gonorrhea, and who claimed that ninety per cent of sterile women were married to husbands who had suffered from gonorrhea either previous to or during married life. Even then it was not accepted by a great majority of the profession. According to the experience of our best authorities it is so difficult to positively differentiate between gonorrheal and severe simple vaginitis without a clear and anthentic history, it being attended with the same symptoms and the properties of also infecting the male, that it is not altogether an easy task to say when these ovarian, tubal, and uterine troubles, even with the presence of the Neisser gonococcus, have a specific origin, especially as simple vaginitis will sometimes produce them all.

He had observed quite a number of women who were the victims of gonorrheal infection, many of them innocently so, having contracted it from their husbands and believed it to be an ordinary leucorrhea. Many of those whose history he was enabled to follow afterward bore children, for many years were apparently healthy, and gave no evidence of the usual compli-

cations.

Dr. Wilson then reported cases illustrative of some of these conditions and results. That gonorrhea does frequently prevent conception is probably well established, but he does not think it is by any means the universal rule; clinical illustrations are too many to the contrary. If Noeggerath's statements were literally true, sterile women and fruitless marriages would be far more common and the increase in the race would be greatly lessened; for there is a surprisingly large percentage of men, judging from his experience, who, if they confessed the truth, have suffered at some time in their lives with gonorrhea.

The following officers were elected for the ensuing year: President—Dr. Cornelius Kollock, of Cheraw, S. C. First Vice-President—Dr. A. B. Miles, of New Orleans, La. Second Vice-President—Dr. J. B. S. Holmes, of Rome, Ga. Secretary—Dr. W. E. B. Davis, of Birmingham, Ala. Treasurer—Dr. H. P. Cochran, of Franklin, Tenn. After introducing and adopting resolutions of thanks, the Association adjourned to meet in the city of Charleston, S. C., the third Tuesday in November, 1894.

W. W. WHITFORD, M.D.

TRANSACTIONS OF THE CHICAGO GYNECOLOGICAL SOCIETY.

Meeting of November 17th, 1893.

The President, E. J. Doering, M.D., in the Chair.

Dr. Franklin H. Martin presented a report of his

SIXTH CASE OF LIGATION OF THE BROAD LIGAMENTS FOR UTERINE FIBROIDS. 1

Dr. W. W. Jaggard.—It is not right on purely a priori grounds to praise nor to condemn a somewhat novel operation. At the same time, when a Fellow prepares a careful paper it is a grave discourtesy to pass over the essay without discussion. I do not intend to criticise. I desire further information. In listening to Dr. Martin's paper the following items occurred to me:

1. The principle of the operation—the partial cutting-off of the blood supply to fibroid tumors by ligature—is very old and has been practised by many operators. While it is true that the ligature has been commonly applied through an abdominal incision, tying of the broad ligaments per vaginam to cut off the blood supply to fibroid tumors has been repeatedly done.

2. The operation is dangerous. The opening-up of the parametria, and the use of a buried silk ligature through an infected canal like the vagina, cannot but be attended by considerable risk of septic infection. The relations of the ureters are distorted by intrapelvic fibroids and I should greatly fear some injury to them. There is also danger of hematosalpinx, inasmuch as Dr. Martin includes in his ligature the oviduet.

3. The operation is inadequate. Dr. Martin designs the operation for particular cases that cannot be managed after the classical methods. The uterine artery, in the class of cases designated, is not the only arterial supply, often it is not the

chief arterial supply.

4. Some months since Dr. Martin stated that seventy-five per cent of his cases were symptomatically cured by electricity. Has he tried electricity in the cases reported to-night, or has he retired from his former position?

¹ See original article, page 32.

Dr. F. Byron Robinson.—I am familiar with this operation because I have seen Dr. Martin perform it, and I feel sure there is a great future for it because it can be done without serious danger to the woman. The technique is very easy, and I do not see that the criticism Dr. Jaggard makes is well taken, because ligatures may be infected in any place: they may produce a fistula through the abdomen. I think the operation is good in another way: the vitality of fibroids is very small, and the slightest turn sometimes causes one to shrink; sometimes ligating the tube makes them go down. The ovarian artery is very much smaller than the uterine; since I saw Dr. Martin do his operation, about ten months ago, I have examined quite a number of fibroids and I find one artery is much larger than the other. Patients come to my office with these fibroids, and I try to have them let me ligate one of these enormous arteries on one side, but they do not feel like submitting. I have noticed that the artery on one side is much bigger than on the other; it feels like the femoral artery. As soon as that artery is tied the whole thing will go down. The ureter cannot very well be ligated if you do the operation as Dr. Martin describes it. As far as I can see, there are about three ureters tied in every hundred fibroids, but we do not know anything about it. I know of one woman whose ureter was ligated six weeks, and after the ligature cut through the ureter resumed its function. But if the ureter is ligated completely the kidney is ruined in about six months. I have tried that in dogs, the kidney shrinking to the size of a plum. Another thing Dr. Martin does which is good is to ligate a large number of nerves in the broad ligament. If any one will dissect the uterus of a baby six months old he will see the enormous number of nerves going to the uterus along the uterine artery. If those nerves are cut off the uterus itself will atrophy. They are trophic

The operation will probably fail in very large fibroids, especially in the fundus, because fibroids in the posterior wall of the uterus are generally so high up that the operation, although it will very likely stop the bleeding, will fail to shrink the tumor, because it can be fed by the ovarian artery. I think that can be overcome. I have tried a new form of operation, which I did a year ago on a big fibroid, by tying off the tubes and then tying off the uterine artery near the cervix as it courses along the side of the uterus. That uterus went down in about three months nearly to normal.

I am surprised at one thing: I read a good many journals, but I do not see Dr. Martin's operation quoted. I notice there are many who do not understand it. This operation is easily performed, and I think it is going to do good because the mortality from total removal of fibroids is great. The operation of total extirpation is certainly good, but it adds to the danger to the

patient. Ithink if the evidence of a hundred gynecologists were taken to-day it would be that the safest operation is Kleeberg's ligature—that is, putting the uterine stump into the wall of the abdominal cavity and constricting it with a rubber ligature. I want to see men report better results than have so far been done to show that total extirpation is safe; it will probably reduce the herniæ, but it is against the woman at the time of the operation. Martin's operation has a bright future. I have a suggestion to add to Dr. Martin's operation, and that is to put one or two ligatures on the uterine artery as it ascends along the side of the uterus. That will hasten uterine atrophy from lack of blood supply. It is difficult to cause the uterus to slough, as its small arteries enter it at right angles and each feeds its own ter-

ritory.

Dr. H. P. Merriman.—I remember, a year ago, when Dr. Martin first presented this subject to the Society, he was criticised very severely by a number of the members. I believe, however, that at that time I was very strong in upholding the view that his operation would prove to be a very successful one, although it was a new operation. It is new only in certain respects. The idea of cutting off the blood supply from the uterus in fibroid tumors is not new, but it has been done, until Dr. Martin devised this operation, through abdominal section and tying off the broad ligaments through the opening thus made in the abdominal cavity. Those who have had experience in these cases know that sometimes this is very difficult to do when the adhesions are numerous and very firm. In the third or fourth ease mentioned Dr. Martin first attempted the operation of opening the abdominal wall and tying off the broad ligament between the uterine artery and the Fallopian tube, but was utterly unable to accomplish it, and for that reason he closed up the abdomen and some time later performed this operation by tying off the lower part of the broad ligament instead of the upper one.

It is not alone cutting off the *blood* supply, but it is the interfering with the *nervous* supply of the uterus by including a large amount of the broad ligament, as large an amount as possible, that checks the growth and produces atrophy of the tumor. I am glad to hear this report to-night and find that the views we took at that time were right. The operation promises, to my mind, to be a very great success; not that it will do away with the other operation altogether, but that it is better in many cases, and is safer than that of opening the abdomen.

Dr. J. A. Lyons.—I see no reason why this operation of Dr. Martin's should not be almost a complete success in overcoming the growth of some of these fibroids. Cutting off the circulation will certainly stop the growth for a time, and, if done in some cases in connection with the Emmet operation, I think would be quite successful. I have a case where I did the

Emmet operation some two years ago, and the growth of the fibroid was overcome, but it began growing again. The operation of Dr. Martin will in this case be suggested. I see no reason why Dr. Martin's operation should be difficult to an experienced operator.

Dr. Franklin H. Martin.—The operation has already been described and published, but in compliance with the request of Dr. Jaggard I am very glad to explain a few points in the tech-

nique.

The woman is prepared as for vaginal hysterectomy. In order to ligate the base of the broad ligament it is necessary to make an incision at right angles to the broad ligament to the right and left of the cervix, as is done in the first step of removing the uterus by the vagina. Next the same maneuvres are instituted that are followed in vaginal hysterectomy to separate the broad ligaments from bladder in front and rectum behind, so that the ligaments may be easily grasped and tied; except that an effort is made not to penetrate the peritoneum, but to simply separate the contents of the broad ligament, the nerves, arteries, veins, and connective tissue, from the peritoneum behind and the bladder in front. After this the broad ligament may be grasped with the two fingers, as is often done just before ligating the base of the broad ligament in vaginal hysterectomy. After the base of the broad ligament is thoroughly freed, a curved needle with a handle, such as is used for ligating the base of the broad ligament in vaginal hysterectomy, is passed posteriorly until it reaches the centre of this separated broad ligament; it then carefully penetrates it, the finger guiding the point. The double ligature is drawn through and cut off; one portion is tied below, then the upper single ligature, still threaded with the needle, is carried up and includes another grasp of the broad ligament. So the broad ligament is tied en masse, usually with two ligatures.

Dr. Jaggard.—What is the relation of the ligature to the

tubes and round ligaments?

Dr. Martin.—The round ligament is beneath the peritoneum, above the bladder; the ligature does not reach it. The tube occupies the edge of the apex of the broad ligament. The ligature is placed one-half to three-fourths of an inch from the cervix. After the ligatures are tied they are cut short and the mucous membrane is closed with catgut, the same thing is done on the opposite side, the vagina is packed with iodoform gauze, and the patient put to bed.

Dr. Newman.—I understand the only attempt is to tie the

uterine and not the ovarian arteries.

Dr. Martin.—The original statement of the operation was, as in this paper, to ligate the base of the broad ligament, with the uterine artery and its branches, in every case where it is demanded. The ovarian artery, under some circumstances, may

be tied in addition on one side. Of course it would not do to tie the ovarian artery on both sides. The lateral incisions are

about one and a half inches long.

Dr. Martin, in closing the discussion, said: In regard to the priority of the operation, it is true that my first report of this operation attracted little attention, although it had the first pages of the best journal in the world for distributing medical news. Evidently the article was not read, or possibly those reading it preferred to wait and not waste time over it until its worth was proved by some one else. If my first article had been read it would have been noticed that I took some pains to go over the literature of the subject. I went through the Surgeon-General's catalogue and also the Index Medicus as far back as they go, but was unable to find an operation suggested, even, of tying the uterine arteries from the vagina, to say nothing of the broad ligaments with the trophic nerve supply, for the purpose of curing fibroids or for checking hemorrhage, as an operation per se. In that article I stated every reference to ligation of the uterine artery; there is a long list, but in every case the operation was performed for the purpose of preparing the patient for some subsequent operation, except in one instance where its ligation is recommended for acute cervical hemorrhage at childbirth from lacerated cervix. The operation has been performed by many of the best operators in Europe, but it was always to prepare the patient for abdominal section, to prevent too great a blood loss before or during an abdominal operation.

Since my paper was published I have had two notices of priority claim: one from St. Louis, the author of which was heard on the subject and answered by me in The American Journal of Obstetrics. He suggested tying the uterine artery for hemorrhagic disease of the uterus. The nerves of nutrition he did not disturb. The other was from Europe. As yet I have been unable to get a copy of the article upon which the priority claim is based. It must be remembered that my operation is more than tying the uterine artery, and that point I emphasized very strongly at the time the operation was first published. It is for the purpose of not only cutting off the circulation to the tumor, but to deprive it of its means of nutrition—not only of blood, but its nerve supply. The operation, then, is not ligation of the uterine artery alone, but the base of the broad ligament, or

¹ Since making the above remarks I have found that Gottschalk (Central-blatt für Gynäkologie, No. 39, September 30th, 1893) and Küstner (Central-blatt für Gynäkologie, No. 33, August 19th, 1893) have done an operation similar to mine. By referring to the articles it will be seen, however, that their operation differs in principle from mine in two important respects. It will be observed, too, that I described and published the technique of my operation before theirs was described, although Gottschalk performed his first operation five months before I did mine.

as much of it as can be easily grasped, including both nerves of

nutrition and blood vessels.

The operation is difficult in some cases, but in my third and fourth cases it was extremely easy. In this connection I received a letter from a physician in Kansas, who promises to make a report of his case. He writes: "Dear Doctor:—I have performed your operation. If you consider that an easy operation, will you please explain to me what you consider a difficult one?" And he goes on to explain that he had difficulty in reaching the broad ligaments from the vagina, but finally succeeded.

Dr. Jaggard speaks of it as being an operation that might with benefit be performed subsequent to the Tait operation. I do not believe that it would be rational or proper to perform this operation after the appendages have been removed and the ovarian artery included. By doing that we would almost surely

get gangrene of the tumor.

In regard to sepsis occurring in the broad ligament, I think in the paper I showed what should be done to avoid that: that is, the thorough preparation of the patient, as thorough as for vaginal hysterectomy. If, after exposing the cervix, the canal is dirty, if there has been a lencorrheal discharge or there are signs of a diseased endometrium, it should be curetted or thoroughly cleansed, the same as before an Emmet's operation, in order to do away with the possibility of infection. Clean out the uterns and vagina, do a clean operation, with clean silk, bury it with clean catgut, pack the vagina with iodoform gauze, and, if you have not failed in any of these particulars, the case will never suppurate. The ligature is buried and does not project from the vagina. It seems to me the operation is not dangerous—that is, comparing it with the operation of hysterectomy or any operation that requires the opening of the abdomen. may be dangerous compared with the Emmet operation or restoring the perineum, but in proper cases I do not see how it even could be more dangerous than either of these operations. If there is thorough preparation of the patient the fact that you might penetrate the peritoneum should not give one much anxiety.

I do not offer this as an operation suitable for all cases of abdominal fibroids that might arise; one would have to use judgment in applying this operation, the same as in selecting an abdominal operation for the removal of a tumor or deciding

between that and Tait's operation.

I was a little surprised myself that the operation was not more quoted, but, since I have thought the matter over and gotten over the first enthusiasm, I am really surprised that, with the present furor for abdominal surgery, it has been quoted so much. I do feel, however, that in time the operation will be appreciated.

I shall be very glad if any one will send me literature that will prove to me that this operation, or the idea of the operation, was suggested before I read my paper before this Society last December.

Dr. W. S. Christopher read a paper entitled

A PLEA FOR THE STUDY OF PEDIATRICS.1

Dr. E. J. Doering.—I cordially indorse every word of Dr. Christopher's excellent paper. There is altogether too little attention paid to the subject of pediatrics in our colleges; it receives less attention than any other study, and of clinics there are practically none. Pediatrics being my own special field of practice, I am frequently called in consultation, and I must confess that I am astonished at the errors made in diagnosis by physicians, even those of prominence, who are especially efficient in other fields of practice. When you consider the vast number of children, the frequency of diseases in childhood, the fact that they form the majority of the patients of the younger physicians, it is clear that at the very least as much time should be devoted to the study of diseases of children as is now devoted to gynecology or obstetrics. I also hope to see more specialists in diseases of children, as we find, for example, in Germany, where the Kinderarzt (specialist in children's diseases) is as common as the oculist or gynecologist in this country. Again I thank Dr. Christopher for calling the attention of this Society to the importance of the subject he has so ably presented tonight.

Dr. W. W. Jaggard.—Believing, as I do, that of the vertebrates there is no member treated so cruelly and irrationally for the ten months preceding its entrance into this world, and for the first one to three years following its entrance into this world, as a human infant, I highly appreciate the essay of Dr. Christopher, and I am delighted to learn that we are going to have two such specialists in this line in Chicago as Dr. Doering and Dr. Christopher. It is also a source of great pleasure to learn that one legitimate object of this Society—namely, diseases of chil-

dren—is about to be cultivated.

Dr. F. Byron Robinson.—The paper will do much good, for I see the author advocates a chair of pediatrics in the colleges. For five years I have tried to have colleges establish a chair of visceral anatomy, but so far I do not know of one college in the country that has done so. I have asked many doctors who have practised from one to twenty years what is the difference between the big gut and the small gut, and many fail, yet they are all abdominal surgeons. It is very plain why men are not good diagnosticians in children's diseases. There are no animals on earth so badly treated as the baby and the horse. I never saw an

¹ See original article, p. 49.

animal so wickedly treated as the horse by veterinary surgeons, simply because they do not understand its anatomy and physiology. The nervous system of the baby is three times as large in proportion as that of man. Of course this is a very difficult thing to manage, and sometimes the child runs riot in his physiology because of this enormously large nervous system.

The paper is excellent, and I hope Dr. Christopher will agitate this subject until every college in Chicago has a chair on

diseases of children.

Dr. J. A. Lyons.—I would say, like Dr. Robinson, that this paper has done me a great deal of good, but in a somewhat different direction. Some four years ago I had a case which I diagnosed as rheumatism, in a child, and I treated it as such. The child got along fairly well; there was no rash, no sore throat, nothing of the kind that I could see to indicate or warrant a diagnosis of scarlet fever. But the mother happened to take the baby down to a medical college dispensary, one that I consider among the best in the city, and she was there informed that it was utterly impossible for the child to have had rheumatism, but that it must have had scarlet fever. Hence I consider myself very fortunate and well paid for the loss of this case, by having had this opportunity of listening to Dr. Christopher's excellent paper.

Dr. William E. Clarke.—The paper seems to be received, as it deserves, with universal approval. To stem the stream that takes to the grave a great majority of the human family "ere youth itself is past," all effort must commence at the fountain. As has been suggested, it is far more difficult to make a correct diagnosis in diseases of infants than in older subjects, hence far more skill is required in their treatment. As in a recent instance, an inflammation of the brain produced by long-standing otitis was treated for a constitutional disease and terminated fatally. Said result would have been avoided had the primary disease been known in time and properly treated. The subject should receive a great deal of attention, and it is to be hoped

Dr. Christopher will continue in the good work.

Dr. W. S. Christopher.—It was with no little hesitation that I brought before this Society a paper consisting only of glittering generalities, but it was prepared as an address to be delivered before a medical association, and not a paper to give instruction or discuss any important phase of the subject. First I want to admit, and to emphasize the fact, that we know comparatively little about the diseases of children. Or rather let me say that what we do know about the diseases of children constitutes an exceedingly small portion of what we ought to know. If we study these infants more closely in individual cases we constantly run up against stumps, reach the limits of our knowledge, and find that the conditions which confront us are entirely beyond the scope of our information. Facts like these, as we meet them

at the bedside, are great stimulants to the study of the subject, to at least forming in one's own mind a demand that the thing shall be investigated. But it has not been investigated, and I think for the reason I attempted to set forth in the paper—viz., the inherent difficulties in diagnosis and the exceedingly tardy development of the collateral sciences which are absolutely essential to the development of many points in the knowledge of infants.

Furthermore, I attempted to show that in the study of children we are dealing with at least two factors which we do not meet with in adults at all, and these two factors, dominating as they do the whole life of the child, make it necessary to have such a thing as a special study of pediatrics. These two factors are growth and development; they are not absolutely synonymous terms. We do not know how the child should grow, how its organs should develop, in the natural course of events. There has been some work done recently, and those who were interested in the anthropological exhibit of the World's Fair may have noticed some observations made on a large scale by Porter, of St. Louis, and several other eminent physiologists throughout the country, upon the subject of growth of the child. They include only weight and stature with reference to age. These most simple works are before us now, but such knowledge as the development of the functions of various organs is entirely in the future. What work does the liver of the infant do that is different from the work of the adult liver? At what rate do the functions of the liver of the infant in its process of development through childhood approach the funetions of the adult liver? The kidneys, the brain, the pancreas, indeed every organ in the body, must be studied with reference to this chemical side of its development. This work is entirely undone as yet; absolutely nothing upon it exists. We know, for instance, that the pancreas is not sufficiently developed at birth to digest starch or secrete a fluid which will digest starch; or rather let me say we know that the pancreatic secretion is exceedingly slight, and because it is slight and deficient in this element such erroneous ideas exist as that infants cannot digest starch. This is entirely erroneous, as we all know they do digest starch. I give this as one trifling illustration of our great ignorance upon this subject. It is the ignorance, not of individual men, but of the profession as a whole, and it can only be met by a systematic study, and systematic study can only be accomplished by having a body of workers who will work in harmony. There is nothing more beautiful in the history of medicine than the development of gynecology. The development of your science as gynecologists has certainly been most wonderful, and has been accomplished by the careful reporting of individual cases. Case after case has got into the journals, and many societies like this have been formed within the last ten years.

Certainly fifteen years ago the subject of gynecology was decidedly immature, but a great mass of workers, toiling away, got out every little thing they could and put them together for discussion and the observation of others, and this has brought to the front a science which is almost complete, or at least has advanced from decidedly infantile proportions into one which is worthy of our utmost commendation. Pediatrics, on the contrary, is still in the most infantile and immature state; it is the least developed of all the branches of practical medicine. Certainly this should not be. I argue, first, that this is the case; next, that it is decidedly essential that it should not be so, for the benefit not only of the individuals who are suffering, the intants and children, but for the benefit of the thousands of adults, and through them the benefit of the race. We have important problems of what we may call a hygienic nature in our great cities—problems that the race as a whole did not face one hundred or fifty years ago, for such immense aggregations in cities did not then exist. We are facing new conditions, and if we do not improve the race through the personnel of its citizens damage to the whole must necessarily result. Furthermore, the light which this study throws upon the diseases of adults is worthy of our greatest consideration. I cannot conceive that a man with one eye can get as good a view of an object as a man with two eyes, and I cannot conceive that a man who studies disease wholly in its presentation in the adult can gain as full a comprehension of the subject as if he studied it from the different standpoint of the infant and child. The particular disease to which I referred, rheumatism, is very striking in the differences of manifestation at different ages. Such a disease as typhoid fever, which they say does not exist in the infant, is one we do find existing in infancy, and its influence on the growth and development of the individual is exceedingly important. I am very glad this paper has been so pleasantly received; it is far more than I had a right to expect.

Dr. W. W. Jaggard presented two specimens of

DOUBLE UTERUS,

both of them accidentally discovered in autopsies: 1. Uterus didelphys (Kussmaul). 2. Uterus bicornis semiduplex (Kussmaul).

UTERINE FIBROID.

Dr. F. Byron Robinson.—I want to present this specimen to illustrate disease of the viscera from reflex action. It is a fibroid uterus that I removed in Dubuque, Iowa, thirty-four days ago. The pedicle came off about nine days ago and the patient is up. This woman had considerable disease of the heart; the kidneys were worked very severely, some days secreting a little

bit of fluid, and other days a large amount; she had disease of the skin which was evidently due to disturbance in the liver function; and she had diarrhea or constipation constantly. This specimen represents the clinical fact that tumors in the abdomen produce fatty degeneration of the liver, heart disease, indigestion, and kidney disease. One of the ablest men in Wisconsin, at the meeting of the Medical Society in June, said that tumors of the abdomen do not trouble a woman much. That is one reason why I present this, that the statement may be seen in print and discussed. The general effects of a tumor and its distinct pathological steps are: (1) irritation, (2) indigestion, (3) malnutrition, (4) anemia, and (5) neurosis—nearly all produced by reflex action.

Dr. Franklin H. Martin presented a

SHORT OBSTETRICAL FORCEPS FOR THE DELIVERY OF FIBROID TUMORS
IN ABDOMINAL HYSTERECTOMY.

In performing abdominal hysterectomy where the tumor is not large enough to be rolled out easily when grasped by the pelvis firmly, frequently it is very difficult to remove. Under such circumstances I should recommend the use of small, short obstetrical forceps for the purpose of delivering the tumor. It accomplishes the delivery with great ease and without in any way macerating the tumor. I have used the instrument in the delivery of the tumor in two eases with great satisfaction.

TRANSACTIONS OF THE NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, November 23d, 1893. H. J. Boldt, M.D., Chairman.

CASE OF RUDIMENTARY VAGINA, UTERUS, AND OVARIES.

Dr. Boldt presented a young woman, A.G., whose vagina was rudimentary and ended in a blind pouch. The uterus was also rudimentary, and, so far as could be determined by touch alone, no ovaries were present. As there was slight menstrual molimina, it seemed quite probable that the ovaries existed in a rudimentary state.

THE CHAIRMAN expressed the opinion that there should be no excuse for failing to make diagnosis of the absence of the

uterus before operation, as had recently been done in a reported case of rudimentary vagina. He also stated that, on account of failure to give the names of patients, doubtless many cases of rudimentary development of the sexual organs were reported by more than one observer. In this case he advised against an operation because the molimina were only slight.

DR. CURRIER referred to a case which he had seen in which a girl 15 years old had absence of the vagina, while all the other organs were well formed. The menstrual molimina had caused a tumor to form, and this in time opened into the rectum. A drainage tube was inserted through this opening into the uterus, but, being removed afterward contrary to instructions, the

opening closed and the tumor reformed.

Last May he saw her again when she was going through the same experience a second time, and advised the removal of the ovaries, and performed the operation. On being asked what would be the result if the girl should marry, he had answered that it would probably be serious, as the husband would have legal ground for divorce. He was then requested to form a vagina, if possible, and he undertook this by the use of graduated dilating bougies, and finally succeeded in getting a passage two inches long by two and a half inches in circumference. During dilatation he unfortunately perforated the bladder, but, as the wound healed promptly, no trouble ensued.

Dr. Stanard said that he had seen in the practice of Dr. W. H. Baker, of Boston, a ease similar to that of Dr. Currier. In this case the uterus was rudimentary, the vagina was very short and did not reach up to the uterus. As the patient wished to marry, Dr. Baker undertook to dissect up to the uterus, but met with an unexpected difficulty in the extreme thinness of the tissue between the vagina and the rectum. This led to the formation of a recto-vaginal fistula, and he did not succeed in earry-

ing the dissection up as far as the rudimentary uterus.

SUBMUCOUS FIBROMYOMA TOGETHER WITH TUBO-OVARIAN DIS-EASE MISTAKEN FOR MULTIPLE FIBROIDS OF THE UTERUS; HYSTERECTOMY; RECOVERY.

Dr. Stanard showed a specimen from a case whose chief interest was mistaken diagnosis. The specimen consisted of a uterus about five by four by three inches, the interior of which was occupied by a tumor in the shape of an inverted cone attached to its fundus. With difficulty he had introduced the finger through the small hymen, but did not make out the demarcation between the cervix and the tumor projecting from it. Two eminent specialists had made the same mistake in diagnosis. Upon operating it was found that the uterus was very symmetrical in form, that the tubes and ovaries were the seat of disease, and after extirpation by Goffe's method, the dilated and thin cervix having been left as a stump, it was found that the true

nature of the uterine tumor was submucous and not interstitial. Ordinarily he preferred complete hysterectomy.

PROBABLE ABDOMINO-PERITONEAL GESTATION SAC.

Dr. Stanard presented another specimen, consisting of the ovary, tube, and a fibrous sac independent of the tube and the ovary, which he believed had been the seat of abdominal gestation. Under the circumstances related he had been unable to account for the tumor, except on the basis that it had been the seat of extra-uterine pregnancy, but no embryonic growth had been found to make this diagnosis a sure one. From the appearance of the tubes it was evident that if the sac were a gestation sac the ectopic pregnancy could not have been in the first place tubal.

In the discussion which followed, Dr. Grandin referred to a case of pregnancy in which the hymen had only a pinhole opening. Dr. Currier expressed preference for the complete removal of the uterus rather than any form of partial amputation. Dr. Boldt doubted whether the sac in Dr. Stanard's case was

the sac of ectopic gestation.

DISEASED TUBES AND OVARIES.

Dr. Currier presented the tubes and ovaries removed from a woman, 21 years old, who had married at 16 and during the past year had followed the life of a prostitute. Every month she suffered eight or ten days from abdominal pains, cramps in the right leg, etc. He likewise presented the tubes and ovaries in a second case, in which there was a history of syphilis, sterility, painful menstruation, etc. In this case he had found on one side a dermoid cyst, and on the other a certain amount of disease in the tube and ovary, and this led him to remove them, although the patient had requested that they be spared if possible. The other patient had made the same request, which led him to ask the question whether the operator would be justified in granting the patient's request and leaving organs on one side when he had reason to believe that they would be the cause of trouble in the future, even though the extent of the disease was not striking to the naked eye.

Dr. Ralph Waldo thought the surgeon should act according to his own judgment, uninfluenced by the patient's social condition, etc. The tubes should not be left on the other side when

they were beyond repair.

Dr. Porter thought the difficulty was to determine what constituted "beyond repair." All the data, including the patient's age, social relations, etc., should be considered. If she were anxious to bear children and was opposed to the removal of both organs, he thought the surgeon might better risk two operations than remove the appendages from both sides and thereby make pregnancy impossible.

A NEW METHOD OF CONTROLLING UTERINE HEMORRHAGE BY MEANS OF ELECTROLYSIS.

Dr. A. H. Goelet presented a portable galvanic battery and a number of electrodes to illustrate the method of checking uterine hemorrhage by using a copper positive pole, or by wrapping the ordinary positive pole with cotton dipped in some metallic solution. Dr. Gautier, of Paris, had popularized this method, and was the first to write about it in 1891, when he designated it interstitial electrolysis. The salt was decomposed, and the power of the elements in the nascent state was much greater on the bleeding parts and extended deeper than where the ordinary electrode was employed. Upon plunging the copper electrode into a piece of steak and passing a current of over one hundred milampères for a short time, it showed an electrolytic effect which was indicated by a greenish tinge for some distance around it. The same effect took place upon bringing the electrode into contact with the bleeding surface of the uterus. This was valuable in all cases where an astringent should be applied to the mucous surface, as in endometritis, granular degeneration of the cervix, etc. Dr. Goelet cited a case where the copper electrode had controlled hemorrhage with one hundred milampères, when the curettement had failed. Quite often twenty-five or thirty milampères were sufficient. The treatment could be repeated when the hemorrhage was not entirely stopped at the first sitting. He said that physicians had often failed to control hemorrhage on account of not having brought the electrode into contact with the entire hemorrhagic surface. This was very liable to take place where the presence of a tumor rendered the uterine canal tortuous.

Dr. Currier said that he had used copper electrodes, similar to those presented by Dr. Goelet, four or five years ago, and found that they were excellent in controlling hemorrhage for the time being, but he thought that it was more from the corrosive effect than from any hemostatic effect of the copper. Then it was difficult with so large an electrode to confine the current to the exact point of hemorrhage, even if the location were favorable.

Dr. Goelet said it should be remembered that the pole did not act as a cautery in controlling hemorrhage. He was surprised to hear that Dr. Currier had used copper electrodes within the uterns four or five years ago, for then he antedated the European operators and should have credit for it. He had found the result in controlling hemorrhage quite permanent and that a greater or less amount of the electrode could be exposed as the case demanded.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Meeting of March 5th, 1893.

The President, G. E. HERMAN, M.D., in the Chair.

Five cases of

EXTRA-UTERINE GESTATION

were reported:

1. Dr. Cullingworth reported a case in which the fetal movements ceased at the end of the eighth month, and abdominal section was performed four weeks later. The patient was a married woman, æt. 25, the mother of one child born fourteen months before admission. Menstruation was re-established and recurred regularly up to July, 1889. On August 14th, a day or two before the next period was expected, the patient was seized with severe abdominal pain; the expected menstruation did not take place. In September the pain reappeared, and from that time there were irregular hemorrhages. In October the abdomen began to swell, and in December fetal movements were felt. On March 3d, 1890, the movements finally ceased and the size of the swelling began to diminish: the patient was sent into St. Thomas' Hospital March 27th, 1890, and abdominal section was performed April 1st. The fetus, which had evidently been dead some days, was nineteen inches long and fully developed; it lay between the layers of the right broad ligament. The placenta, nine inches in diameter and one pound eight and a half ounces in weight, was separated and removed without loss of blood. The mouth of the emptied sac was stitched to the edges of the lower part of the abdominal wound. The patient made an excellent recovery. The wound was quite healed in four weeks, and the patient left the hospital well on the 3d of May. The important point in the case was the absence of hemorrhage on removing the placenta, although only four weeks had elapsed since the death of the fetus.

2. Dr. John Phillips related the next case. The patient, act. 28 and married eight years, has two children, the last five years ago. Both labors were normal in every way. The last period ceased on January 30th, 1891, after which she had morning sickness and considered herself pregnant. During the last week in April, when passing urine (after allowing her bladder to become much distended), she was seized with severe paroxysm of pain in the lower abdomen, but did not lose consciousness.

Some slight vaginal hemorrhagic discharge occurred. After this she began to have spasmodic abdominal pains, chiefly on the right side. May 26th she went to Soho Hospital. Serous discharge was expressed from the breasts, and the uterus was found fixed in the pelvis, and an abdominal tumor made out. Early in August shreds began to be passed with the hemorrhagic discharge; the abdomen continued to increase in size. On September 15th the breasts became very painful and swollen, but shrank the next day. They returned gradually to their ordinary state of flaceidity. The patient was admitted into King's College Hospital October 12th, and three days later the abdomen was opened and a putrid fetus of about six to six and a half months' growth removed from a cyst in the left broad ligament.

The patient recovered.

3. Dr. Sinclair Stevenson, of Cape Colony, communicated three cases of extra-uterine gestation. The first was in a woman et. 40, married seventeen years, but never previously pregnant. She thought she had passed her full time. On examination the abdomen was very distended; a fluid thrill could be felt all over; the body of the fetus was distinctly felt and the fetal heart heard. The patient was seen a week later, when she looked worse, temperature 101°, pulse small. It was decided to operate, but she died before the necessaries were got together. Post mortem a cyst containing a large fetus and some most offensive greenish fluid was found filling the whole of the abdominal cavity. It was not determined whether there was any tubal rupture. The broad ligaments were normal, apparently, and the placenta (which was attached to the fundus uteri) was un-

usually small.

The second case was that of a woman æt. 30, married eleven vears, five children, last confinement eleven months ago. Three months after her confinement she was attended for acute abdominal pains followed by severe prostration. She did not think she was pregnant. After the attack she had floodings for some days, and a pelvic swelling was then discovered; this rapidly enlarged and was thought by her medical attendant to be an ovarian cyst. Six months after the attack of pains she was seen by Dr. Stevenson, who found in the left side of the abdomen a tumor extending two inches above the umbilicus; it was hard, nodular, and without fluctuation. Abdominal section was performed, the sac incised, and a full-sized living child extracted, during which the sac was torn and free hemorrhage followed. The sac was drawn up through abdominal wound, clamped low down with rubber tubing, and then cut away with the contained placenta. The stump was fixed in the lower angle of the wound by means of two knitting needles. The patient made an excellent recovery.

The third patient, æt. 34, married six years, no children, always healthy. Three months before being seen by Dr. Steven-

son she flooded for six weeks; two months previous to this she had menstruated very little; no loss since. On examination there is to be felt an oval growth reaching up to the umbilicus; it fills only the right side, is smooth, and apparently contains fluid. Per vaginam a tender swelling is felt filling both fornices. Abdominal section showed a large cyst of the broad ligaments. This was evacuated of its fluid contents (which were very offensive) by a trocar, the adhesions were freed, and the whole of the sac brought out, clamped, and cut off. The patient recovered well.

Mr. Sidney Turner thought the rhythmical contraction of the uterus in cases of ectopic gestation a fact of much interest. Again, the question of waiting till the death of the fetus had taken place before operation for its removal was undertaken was an important point for consideration, as was the question whether the placenta should be removed at the time of operation or left to break down and come away subsequently. Hemorrhage of an alarming character no doubt often occurred when its removal was undertaken, but this sometimes subsided after the separation was completely accomplished, as occurred in a case operated on by him. He mentioned that in this case he used oil of peppermint as an antiseptic, and he drew attention to the value of compressing the aorta, when the abdomen was open, by means of the hand or by a clamp, so as temporarily

to completely control the bleeding.

Dr. Horrocks related a case which was kept under observation during the last months of gestation, so that the death of the fetus might take place before operation and thus lessen the risk of hemorrhage, but in which at full term internal bleeding set in. Immediate operation was resorted to, but the patient died on the table. He had determined in future not to wait for the death of the fetus, and about a year ago he operated on a case, but on attempting removal of the placenta very free hemorrhage set in, which was only stopped by ligaturing the broad ligament bit by bit and cutting it away with the placenta. The operation lasted three hours, but the patient made an excellent recovery. He considered that the question of operation as soon as the diagnosis was made should be seriously considered in every case. If the patient was in good condition it might be justifiable to wait, but it must be remembered that these patients were always on the brink of serious danger. He mentioned the interesting fact that the uterus contracted and relaxed in extra-uterine as well as in intra-uterine gestation; also that in extra-uterine gestation the uterus increased in size pari passu with the gestation, and its walls were so thick at any given stage when the child was alive as to admit of being stretched into a size comparable to the same degree attained by an intranterine gestation of the same age.

Dr. William Duncan agreed with those who argued that when extra-nterine pregnancies were diagnosed in the late months of gestation, it was not advisable to wait until the child had been dead for some time before operating, as the danger of hemorrhage is not so very formidable if the placenta be not interfered with; besides which, the occurrence of sepsis can be in great measure avoided by taking proper precautions. He thought that if extra-uterine gestation were diagnosed in the early months, then operative measures should be undertaken without any delay whatever, as the danger to the mother was so great; if, however, the child had nearly approached viability, he would feel inclined to endeavor to save it by keeping the mother absolutely at rest and watching her carefully until there was a probability of saving both her and the child by operation. He thought it a dangerous practice to try and remove the placenta at the time of operation, unless one felt pretty sure the circulation had ceased in it; and he asked Dr. Cullingworth what were the reasons which induced him to try and remove the placenta at once. He (Dr. Duncan) related a ease in which profuse hemorrhage occurred the day after operation for extra-uterine gestation and while the cyst cavity was being gently washed The probability was that a piece of the placenta was detached by the nozzle of the syringe. Fortunately the injection of a solution of ferric chloride stopped the bleeding and the patient ultimately recovered. It was unfortunately the fact that it is impossible, in any given case, to foretell how soon the placental circulation will cease after the death of the fetus, as some cases have been recorded in which the placental vessels were completely thrombosed in a few weeks, and others where the circulation was still going on several months after fetal death.

The President said there were three points raised in the papers and remarks on them on which he wished to comment. The first was whether it was desirable to postpone operation until after the death of the child, or not. He thought that in the first six months of pregnancy the sooner the operation was done the better; the patient was saved much suffering and risk. At or near term, on the other hand, he thought the evidence of statistics as to the tremendous danger of operating during the life of the child was so clear and strong that it could not be set aside. The second point was as to the wisdom of trying to remove the placenta. There were at least three different conditions of placenta that were met with: It might be completely thrombosed, and then could be easily and safely peeled off. It might be attached to the broad ligament; it then could be pulled up, its seat of attachment tied, and the placenta cut away like a broad-ligament cyst. The circulation might be still alive in it, and its attachments might be widely spread over important and vascular parts; in that case any attempt at its removal would be disastrous. The third point was as to the necessity for stitching the sac to the abdominal walls; he thought it was quite unnecessary. In a case on which he had operated about a month ago, in which he found the sac had begun to suppurate, he removed the fetus of five and a half months' growth; did not interfere with the placenta, but filled the sac with iodoform gauze, leaving the end protruding, and not stitching the sac to the abdominal wall. The gauze was not disturbed for ten days; it was then removed and the sac daily washed out for the next fortnight, bringing away placental debris, and the patient recovered as well as if the sac had been carefully stitched to the abdominal wall.

Dr. Herwood Smith asked the President if, in the case just mentioned, he considered that by plugging the sac with gauze the edges were thereby brought forward, or how otherwise was

the general abdominal cavity safeguarded.

Dr. Donald (Manchester) believed that, as a rule, it was advisable to postpone operation until a considerable period had

elapsed from the death of the fetus.

Dr. Boxall suggested that the cause which eventually led to the death of the fetus had for some time previously been in active operation so as to retard development, hence the apparent

discrepancy with regard to the death of the fetus.

Dr. Cullingworth, in reply, said he believed in removing the whole of the sac, in operations for extra-uterine gestation, whenever practicable. He agreed with the President that ligature of the sac to the abdominal walls was unnecessary. He would like to know on what authority Dr. Horrocks stated that the enlargement of the uterine walls and cavity continued to increase up to the moment of the death or removal of the fetus. He agreed that in the earlier months abdominal section was indicated as soon as diagnosis was established, but that in the later months each case had to be decided according to its own special circumstances. In the case he recorded he had commenced the separation of the placenta tentatively, because he regarded such a course preferable wherever it was at all practicable, and not because he had any reason to believe that in that particular case the placental circulation had ceased. Martin, of Berlin, both advocated and practised removal of the placenta at the time of operation, and a series of cases from his clinique, illustrating this practice, had been published in this country some six or seven years ago by Dr. Annaker, of Manchester.

Meeting of May 3d, 1893.

The President, G. E. Herman, M.D., in the Chair.

THE LOCHIA.

Dr. Giles read a paper on this subject, giving the results of investigations on the quantity of lochia after labor.

The method employed is described and sources of error dis-

cussed.

The conclusions derived from observations on sixty cases are as follows:

1. The average normal quantity of lochia is about ten and a

half onnces

2. The duration of the discharge is on the average nine or ten days.

3. The degree of parity does not influence the quantity.

4. Non-suckling does not increase the discharge.

5. The quantity is generally greater in younger women up to

the age of 25.

6. The weight of the child has a slight, and that of the placenta a well-marked, influence, the quantity increasing with the weight of the placenta.

7. The quantity increases with the amount of hemorrhage at

the time of labor.

8. The lochia are more abundant in the case of those who habitually menstruate profusely.

9. The quantity is generally greater in the case of women of

darker complexion.

The difference between Gassner's results (viz., fifty-two and a quarter ounces) and the author's (viz., ten and a half ounces) is attributed mainly to the use of antiseptics, partly to the effect of astringent douching.

The factors that influence the quantity of lochia are discussed. The author believes that the three discharges—during menstruation, during labor, and during the puerperium—vary simultaneously, the quantity depending on predisposing conditions, of which the amount of pigmentation is generally an index, and that all three discharges are habitually greater in darker women.

Dr. Amand Routh thought the smallness of Dr. Giles' results were in great measure due to sources of error as regards, 1st, evaporation from the pads; 2d, admixture of lochia with urine during micturition and defecation, when the uterus was stimulated to contract and the vagina to empty itself; and 3d, the washing away of débris by vaginal douches. Clots could be weighed, but débris and discharge thus removed could not. He proved from Dr. Giles' own cases, by dividing them into three groups—(a) when the child weighed under six and a half pounds, (b) between six and a half and seven and a half pounds, (c) over seven and a half pounds—that the placenta weighed eighteen and a half, twenty-two, and twenty-three and a half ounces respectively, showing that the relation between the weight of the child and that of the placenta was well marked. He pointed out that the author's table hardly bore out his conclusion that the loss at labor varied as the habitual menstrual loss. He asked for information as to the effect of ergot, and discussed the effects of antiseptics in lessening lochia, believing that the only essential difference between modern antiseptics and natural aseptic midwifery was in the use of antiseptic vaginal douches, and that as the lochia mainly proceeded from the uterus, accompanying the process of involution, vaginal douches could not materially influence the quantity. He regarded astringent intra-uterine douches as sometimes a source of danger to the patient by checking normal uterine excretion. He believed that besides the habit of menstruation, the quantity of lochia depended also on the area of the internal surface of the uterus, which was increased in cases of hydramnios, subinvolution, and of large or multiple ova.

Dr. Leith Napier agreed with the author in his explanation of the difference between the results arrived at by Gassner and those in the present paper. He thought that the shorter time in bed, the examinations by students, and the non-use of the binder favored, in Gassner's cases, the imperfect involution

which would lead to a greater lochial discharge.

He believed that neurotic influences were of importance, and that saline purges increased the amount, whereas castor oil did not. He inquired what treatment was adopted at the General Lying-in Hospital when the red discharge was continued for

longer than an average period.

Dr. Boxall's observations confirmed the author's conclusions as to the duration of the lochia. He found, further, that fever unconnected with sepsis or pelvic inflammation was apt to prolong the flow. He suggested that a distinction should be made, in future observations on the effect of non-suckling, between those patients who had no milk and those who, having plenty of milk, would not or could not suckle. He pointed out that early cessation or partial suppression (so-called) of the lochia were in themselves favorable indications. He had already shown by experiment that in merely vaginal douches some of the fluid often reached the uterine cavity. He thought, however, that the temperature at which the douche was given had more to do with diminishing the lochia than the astringent had.

Dr. Wheaton thought the differences between Gassner's results and those of the author were entirely due to the employment in the latter's cases of antiseptic douching, as by this means the irritation of the inner surface of the uterus by micro-

organisms was diminished.

The President said Dr. Giles' paper would enrich the Transactions by a contribution of permanent value, for it was a record of facts. Certain sources of error had been mentioned (which Dr. Giles had discussed in his paper). He (the President) did not think they could account for the difference between Giles' results and those of Gassner; for they must also have attended Gassner's research, and it would be interesting to know in what ways Gassner had guarded against them. He did not think that Churchill's statement as to the source of the lochia settled the question. He (the President) thought the lochia came partly from the uterus, partly from the vagina. The vagina had to undergo

involution as well as the uterus, and it was greatly stretched and compressed during delivery, and such injury to a mucous canal would make it liable to inflammation. It was very common, in examining women a few weeks after delivery, to find the vagina injected and containing pus. This puerperal vaginitis, he thought, was the chief cause of leucorrhea being so much commoner in parous women than in virgins. The difference between Gassner's results and Giles' did not seem to him surprising, for Gassner's observations were made in a German lying-in hospital in the pre-antiseptic times, and the probability was that many of his patients had vaginitis and endometritis, produced by the entrance of microbes. Giles' patients were protected from these diseases by antiseptics; and, besides that, the antiseptic douche, used twice daily, had an astringent effect on the vagina. He did not agree with those who had said that puerperia in which donehes were used were not natural. The donches, by destroying morbific germs which produced disease, kept the lying-in "natural." He only differed from Dr. Giles in one small point. It seemed to him that the variation dependent on the size of the child was about the same as that dependent on the size of the placenta, and not much less than it, as Dr. Giles had put it.

Dr. Cleveland attached considerable importance to imperfect contraction of the uterus as a cause of increased lochial discharge. He thought that after expulsion of the placenta permanent uterine contraction should, as far as possible, be insured by continuous hand pressure for some fifteen or twenty minutes. He discouraged indiscriminate syringing in private practice, un-

less there were special reasons for its adoption.

Dr. Giles, in reply, thanked the Society for its kind reception of his paper. The small quantity of the lochial discharge had much astonished him when making the investigations. With regard to the sources of error, Dr. Routh mentioned evaporation and loss during micturition and defecation. The former must have been insignificant, as the discharge seldom soaked through to the outer surface of the pad; and loss during evacuation would have been detected in the bedpan, which was always used during the period of observation. Ergot was given in a few cases, but the results were conflicting. As far as he recollected, the purge on the third or fourth day did not increase the discharge, but there was in some instances a slight increase when the patient began to get up, or a slight return if the discharge had ceased. Dr. Boxall's remark that there were two classes of non-suckling women, those who could and those who could not suckle, was probably the explanation of the fact that in the cases observed the quantity of lochia was rather less in the non-suckling women. He agreed that the influence of fever on the duration of the flow would be established by his eases. His reasons for not laying more stress on the weight of the child as a factor were that there were only seven cases in the first

class—i e., children of under six pounds—and only three in the class over nine pounds, and that with intermediate weights the quantities of the lochia were practically the same.

Mr. Lawford Knaggs read a paper on

AN UNUSUAL CASE OF HEMATOSALPINX.

Mrs. —, æt. 44, began to menstruate at 11. The discharge was regular, monthly, until August, 1891, when the quantity became variable. She had contracted syphilis, and probably gonorrhea, fifteen years before from her husband. She had had four children, the last of whom was born before the venereal symptoms appeared.

In 1889 she had a sudden flooding on the day after menstruation had ceased. The discharge was of a deeper color than menstrual blood, and offensive. It lasted twenty-four hours, and was succeeded by an offensive, greenish-yellow discharge which lasted fourteen days and left no bad symptoms. She had pain in the left ovarian region. The next period was normal.

She had a similar attack in 1891. Two periods due after this did not appear. She had caught cold during the attack and had shivering fits and much pain. On examination, resistance and slight tenderness in left ovarian region. Uterus of normal size, pushed over to the right by a swelling in the left broad ligament, and almost fixed. The swelling was of the size of a fetal head, fixed only on account of its size, and defined from the uterus by a sulcus. Right appendages not clearly felt. A diagnosis of hematosalpinx was made. There was a dark-green discharge still. In a week or two the tumor disappeared, leaving some thickening behind it. She was operated on, and a mass the size of a small peach was found fixed on the left side of the pelvis, having the ovary behind and below it. It was found to consist of the thickened and dilated ampulla and to contain a little muco-pus. The cavity was continuous with the Fallopian tube. The author supposed that during menstruation blood collected in the tube, which was closed at the ostium abdominale and was already septic. When the swelling of the mucous membrane at the inner orifice of the tube disappeared after menstruation, the blood escaped, and was followed by a purulent discharge from the tube and the abscess cavity continuous with it. He considered that the tumor discovered was due to distention of the tube and abscess cavity.

THE PRESIDENT thought this explanation ingenious and

plausible.

Meeting of June 7th, 1892.

The President, G. E. HERMAN, M.D., in the Chair.

A paper was communicated by Dr. Giles on

THE LONGINGS OF PREGNANT WOMEN.

"Longings" fall into two ancient divisions, according as the objects longed for are: (1) natural and healthy; (2) unnatural or unhealthy.

The former class is here alone considered, the data being based

on particulars of three hundred cases.

The popular view of longings is stated, and the principal foods longed for are tabulated, to ascertain the relation between sickness and longings in general and various classes of foods in particular.

Three explanations of the cause of longings:

1. That they are due to a desire for something to check the feeling of nausca. This applies especially to sour things.

2. That they are the expression of an instinctive want for

some class of food in the altered condition of pregnancy.

3. The author thinks that in many cases they are due to a kind of auto-suggestion prompted by a popular tradition, and gives evidence in support of this view.

The subject is important from the point of view of the feed-

ing of infants.

Mr. A. Doran said that the tradition was ancient and deeply rooted, so that for ages women had expected to "long," and had longed accordingly. Marlowe and Fielding had pointedly referred to the tradition in "Dr. Faustus" and "The Life of Jonathan Wild."

The President said that the long-continued belief in the existence of these longings was evidence enough that there were such things; and the question was, Are these longings merely a whim, a vagary, or are they a genuine indication of a physiological need? 'He thought that Dr. Giles' paper showed that they might be of both kinds. The great preponderance, among the things longed for, of things containing vegetable acids seemed to him to strongly suggest that these things might be in some way beneficial; that the longing for vegetable acids was the expression of a physiological need.

Dr. Giles, in reply, said that he used the term "auto-sugges tion" in the sense in which it was used in works on hypnosis: just as in "suggestion" one person influences the beliefs and feelings of another, so in auto-suggestion. A woman starting with the feeling, induced by the conversation of her friends, that she ought to feel certain cravings, unconsciously persuades herself till she actually experiences these cravings. He only suggested this, however, as an explanation of a certain number of

the longings met with. Others had, no doubt, a more physiological basis.

A paper by Mr. A. Doran on

THE ABSORPTION OF FIBROID TUMORS OF THE UTERUS, WITH THE REPORT OF A SUSPECTED CASE,

was next read.

A woman, et. 40, was admitted into hospital under the author's care on May 9th, 1890. About three years previously a lump was felt in the left iliac fossa. It never disappeared, and gave rise to dragging pains when she walked about. Thirteen weeks before admission she was seized with abdominal pains and dysuria. A fortnight before admission she fell down, receiving a heavy blow on the tumor. Severe abdominal pain and fever followed. On admission a solid, very hard mass was detected; it filled the left iliac fossa and reached upward to the left above the umbilical level. The os uteri lay close to the pubes; the cervix was almost absorbed in the tumor, which bulged far down in the pelvis behind the vagina. The mass was fixed. After three weeks' rest and appropriate treatment the tumor moved freely; a second lobe was detected to its right, reaching half-way to the umbilicus. On February 10th, 1891, the tumor was again examined by the author. It could just be felt above the pelvic brim to the left, and no longer extended downward behind the cervix. A discharge of fetid fluid occurred in August, 1890, and since then the tumor had steadily diminished in size. On November 25th, 1892, the author once more examined the patient. There was no trace of any tumor. The uterus was freely movable; its eavity measured three and a half inches.

The author believed that this ease was an instance of the absorption of a uterine fibroid before the menopause. The injury provoked inflammation, followed by impaction, then resolution of the inflammatory products and slow disappearance of the tumor. The discharge may have been due to breaking down of a submucous growth; the masses in the abdomen, however, were clearly not submucous. The body which had filled Douglas' pouch moved freely as part of the tumor, after subsidence of the inflammation, so that it could not have been an abscess

or solid inflammatory deposit.

Similar cases of disappearance of fibroids in association with inflammation, congestion, or injury have been recorded by Rigby, Prieger, Playfair, Von Mosetig, and Guéniot.

The author has collected thirty-seven eases of disappearance (not always complete) of uterine fibroids. Brief histories, taken in all cases direct from the original sources, are appended, and the cases are tabulated thus:

1. Spontaneous disappearance of fibroids directly associated

with pregnancy—thirteen cases.

2. Spontaneous disappearance of fibroids; patients under 45; history indicating inflammatory complication, congestion, or injury—six cases.

3. Spontaneous disappearance of fibroids; patients reported as under 45; cases not directly associated with pregnancy, pel-

vic inflammation, etc.—ten cases.

4. Spontaneous disappearance of fibroids; patients over 45, or no age given; cases not associated with pregnancy, pelvic in-

flammation, etc.—eight cases.

Sources of fallacy are discussed and the possible effects of treatment noticed. The relation of the disappearance of fibroids to the menopause is uncertain. Kleinwächter finds that these tumors do not, as a rule, cease to grow at that epoch of life.

Although any one of the cases here reported may be based on an error of diagnosis, nevertheless so many cases have been recorded by experienced authorities that there can be no doubt that fibroid uterine tumors of considerable size sometimes disappear spontaneously before the menopause.

Dr. Duncan agreed with the author that uterine myomata sometimes spontaneously disappeared before the onset of the menopause. He mentioned the case of a woman, at. 33, who consulted him two and a half years ago. She was suffering from severe metrorrhagia, was very thin and anemic, and said that her abdomen had been rapidly enlarging for three months before her visit. On examination a soft central tumor was felt, reaching up to the umbilious; bimanually it was continuous with the uterus; sound passed four and a half inches. Abdominal section was performed, as the woman's condition was so serious, but the tumor was everywhere fixed to the surrounding organs by adhesions which bled profusely on attempting to break them down, so the hemorrhage was arrested and the operation of removing either the tumor or the uterine appendages was not proceeded with. The patient came to see Dr. Duncan a year ago looking much improved, and on examination he found, to his intense surprise, that the tumor had altogether disappeared and the uterus was of normal size. He had at the time of operation diagnosed the case as one of sarcoma uteri, and he was at a loss to explain the disappearance of the tumor.

Dr. Grally Hewirt had met with two cases in which uterine fibroids had disappeared, apparently by absorption, before the

menopause.

Dr. Lewers mentioned the case of a patient to whom, three or four years ago, he had given four applications of electricity without any benefit. The patient was now much better, and attributed the improvement to the treatment adopted; but as she was now 47 years old, he himself thought it more likely that her improvement was due to the approach of the menopause.

Mr. Doran said he was interested in Dr. Duncan's case, which

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resembled Von Mosetig's. Most fibroids did not disappear after exploratory operations, and the phenomenon was certainly rare. He agreed with Mr. Skene Keith in thinking that a submucous fibroid existed in his own case, and that its sloughing encouraged changes in the remaining fibroid growths sufficient to insure their destruction. He also found that fibroids became rather more troublesome at the menopause than before. Mr. Keith seemed correct in stating that it was not till about two years later that they began to diminish. Mr. Doran was not aware that either Dr. or Mr. Skene Keith had ever before claimed that Apostoli's treatment eaused uterine fibroids to disappear. Dr. Keith' stated that the treatment "puts a woman with a fibrous tumor who suffers much into the position of a woman with a fibrous tumor who does not suffer or may be unaware of its presence. It does not bring about the disappearance of the tumor, or it does so very rarely, but the size is lessened more or less—one-half, one-third, two-thirds." Mr. Doran was therefore interested in Mr. Skene Keith's assertion, made that evening, that he had seen fibroid tumors really disappear after electricity. Dr. Graily Hewitt's two cases were of value, espeeially as it appeared the patients were both under 40. Dr. Lewers' observation was important; it would come under the qualifications which applied to series 4 in his tables, the patient being over 45, so that the share in the diminution of the fibroid which might be allowed to Apostoli's treatment four years previously remained problematical.

REVIEWS.

OUTLINES OF OBSTETRICS. (A Syllabus of Lectures delivered at the Long Island College Hospital.) By Charles Jewett, A.M., M.D., Professor of Obstetrics and Pediatrics in the College, etc. Pp. 264. Philadelphia: W. B. Saunders, 1894.

The intention of the author of this Syllabus is to help the student in securing a classified knowledge of the *outlines* of obstetrics, in the belief that complete and systematic grounding in the subject is ultimately best secured when the foundation is a sound one of general facts and principles. From this standpoint we agree in the utility of this Syllabus, at the same time expressing the hope that no student will deem it all-sufficient for the purpose of passing his feature to a standard of this posture.

Rarely has it been our fortune to read a work of this nature

^{1 &}quot;On the Treatment of Uterine Tumors by Electricity," British Medical Journal, vol. i, 1889, p. 1281.

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where from beginning to end definitions are so exact and rules for guidance are so safe. Obviously there are points wherein honest difference of opinion might lead to criticism, but such must be the inevitable result when dealing with a science in which exactitude has not been attained. A method of treatment which appeals to one mind may not seem the best to another.

In commending the book to the student within the limitations stated, we would express the hope that the success awaiting the Syllabus may stimulate Dr. Jewett to the writing, in the same modern vein, of a treatise on obstetrics.

E. H. G.

THE DISEASES OF CHILDHOOD (MEDICAL). By H. BRYAN DONKIN, M.D. Oxon., F.R.C.P., Physician to the Westminster Hospital and to the East London Hospital for Children at Shadwell; Joint Lecturer on Medicine and Clinical Medicine at Westminster Hospital Medical School. New York: William Wood & Co., 1893. Pp. xiv.-433.

This book is designed as a clinical work for practitioners and senior students, and is a record of the author's own experience. It is based on the records and recollections of twenty years of service at the East London Hospital for Children, and has a peculiar value as it embodies the personal opinions and experience of a careful and trained observer. A general knowledge of disease on the part of the reader is assumed, peculiarities seen during childhood only being emphasized. The work is, therefore, considerably abridged, and in treating many subjects no attempt appears to have been made to render them complete. Here lies the chief criticism. The abridgment is in some places too great and rather too much has been assumed as to the reader's knowledge. Some chapters will, no doubt, seem unsatisfactory and incomplete to the general practitioner. Further criticism might be made upon certain chapters, particularly those devoted to gastro-intestinal diseases, on the ground of imperfect classification. Diarrhea, for example, is divided simply into acute and chronic. No description of the several varieties of acute diarrhea can be made clear-cut and wholly satisfactory without more definite subdivision than the author has employed.

The book is in no sense encyclopedic and contains but little matter compiled from the works of other authors. It is to a marked degree personal, and as such is of great interest and considerable value. Success in medicine depends largely upon personal knowledge, which each practitioner must gain from his own experience. A considerable part of this knowledge cannot be transmitted to others and dies with him. The present work has a peculiar charm from the fact that it consists largely of this special knowledge, which the author has gained from long experience and close observation. Although he has been led to many conclusions at variance with those commonly held by the

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profession, his work is on the whole judicious and reliable, and is worthy of the highest commendation. He is in accord with all observers of infantile disease in attributing a large share of the gastro-intestinal disorders to bad feeding. The chapter on infantile wasting is an especially good one, though a little more space might profitably have been devoted to the subject of infant diet. Tuberculosis in its various manifestations receives, of course, much attention. The vexed question of scrofula is treated very judiciously. The author believes that, as a clinical term, scrofula may be properly used to indicate a peculiar hereditary tendency to inflammation of various organs, especially the lymphatic structures. The chapter on rickets is also worthy of special notice. Improper food, particularly that deficient in fat, he regards as a most important etiological factor. He believes from clinical observation that there is a non-contagious membranous laryngitis. This is in accordance with the latest researches, which seem to prove the existence of a nondiphtheritic croup. The proportion of such cases is, however, very small, a clinical differential diagnosis being rarely possible.

The work, on the whole, is a valuable addition to pediatric literature.

Obstetric i Nursing. By Fleetwood Churchill, M.D., formerly President of the Royal College of Physicians in Ireland. Revised and greatly enlarged by Thomas More Madden, M.D., F.R.C.S. Ed., Obstetric Physician and Gynecologist, Mater Misericordiæ Hospital; ex-Examiner, Conjoint Board Royal College of Surgeons and Apothecaries' Hall; Consulting Physician, Hospital for Children, etc., etc., etc. Pp. 207. Illustrated. London: Ballière, Tindall & Cox, 1893.

It is unfortunate that the distinguished editor and reviser of this book should have stated in the preface that he must "assume the chief responsibility for the views and methods of practice advocated," having "rewritten, expanded, or altered nearly every page of the practical portion of the work," for otherwise one would gladly attribute to a reverence for antiquities several remarkable statements which have been allowed to remain in these pages. It sounds strange in these days to hear that after labor, the external parts and vagina having been washed and irrigated with a boric solution, a "soiled sheet folded" may be placed under the hips. One wonders why an old but clean sheet might not serve the purpose, more especially since the advice is given in a paragraph entitled Local Asepsis. It also seems a trifle archaic to insist upon the use of a binder to secure an unspoiled figure for the lady when she is able to dress and go down-stairs. That after-pains, when not too severe, are considered beneficial by medical men will be news to a large part of the profession; also that it is considered

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good treatment to apply fomentations and poultices to tender and raw, cracked and painful nipples and to inflamed breasts. Possibly, however, the author considers suppuration useful and in all cases to be cultivated, or else he does not believe in any relation between poulticing and the inducing of suppuration. He should have the benefit of the doubt.

Another point strikes the American reader as strange, and that is the amount of responsibility given into the hands of the midwives, for whose use the book is avowedly written. In the case of severe after-pains they are told that they had "better obtain a prescription from a medical man," but if acting alone they "may give a draught containing from twenty to twenty-five drops of laudanum." When the milk is about to make its appearance "the change may be preceded by a rigor or fit of shivering, and accompanied by a degree of fever, with quick pulse, hot skin, headache, and thirst. These symptoms need not alarm you," says this manual, "if you are satisfied that they arise from the milk." The midwife is to determine whether the rigor is really due to the coming of the milk or to inflammation of the womb; if unable to decide she is to call in the accoucheur.

The well-known intelligence and diffidence of midwives, and their eager desire to efface themselves and call in help at the first untoward symptom, rob this advice of any danger to the patient, so that it is perhaps hypercritical to call attention to it. When the midwife is carefully instructed to pass the catheter strictly under cover, we cannot but feel a pity for the victim to the uncertain gropings; and when she is told that she should possess "a siphon syringe with an enema pipe, as well as an elastic catheter, and take them with her to every case," we shudder. True, the direction is given on a later page of the book that the same elastic catheter and vaginal tube should not be used for different patients; but pages 78 and 182 are widely separated, and a nurse might be called to a case before she had read the book through. We cannot agree that the "nurse's primary duty in every puerperal case is the removal of all septic matter or possible sources of infection, not only from the external parts and vaginal orifice by frequent sponging and washing with some antiseptic solution, but also by the thorough cleansing out of the uterus, and vagina when necessary, by hot water or antiseptic douching with the irrigator, subject to the approval of the doctor, if there be one in attendance." Truly, where midwives are so capable, the doctor may well seem a supernumerary. The list of requisites for the lying-in room seems rather inadequate, and some physicians might question the advisability of reading aloud to the patient a few days after delivery, even if the nurse can "read nicely"; but these are minor points. The use of the word "preventative" is probably a printer's error, as is "anti-infection, or self-poisoning with sep-

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tic matter"; erudite midwives would probably not be puzzled

by the latter expression.

It cannot be said that these pages contain no useful information. That would not be true. The advice to nurses in the opening chapter is excellent and inculcates a modesty and deference to the physician which the later pages do much to destroy. Part VII., on Gynecological Nursing, seems more "up to date" than other portions of the work. Taking the book as a whole, however, it is a question whether such Rip-van-Winkles of medicine would not best be left in undisturbed repose upon the shelves, where they would serve a useful purpose as standards of comparison in the advance of medical knowledge.

A. R. S.

ABSTRACTS.

1. Bröse: The Etiology, Diagnosis, and Therapeutics of Gonorrhea in the Female (Zeitschrift für Geburtshülfe und Gynäkologie, Band xxvi., Heft 1).—Bröse's paper is part of a discussion which took place at the last two meetings of the Berlin Gynecological Society; and the importance and interest of the topic, as well as the good points which it contains, war-

rant its more extensive reproduction.

The author points out Noeggerath's great merit as being the first to draw attention to the frequency of gonorrhea in women and to its great etiological importance in gynecological diseases. He remarks that the frequency of gonorrhea is not easy to state, because it is difficult to decide whether a catarrhal affection of the female genital canal is due to clap or not. A simple microscopical examination of the secretion is not at all sufficient. While the presence of gonococci in the secretion shows the affection to be of a gonorrheal nature, their absence is not conclusive to prove the secretion non-gonorrheal and non-infectious.

Lawson Tait is one of the leading opponents of the theory "that gonorrhea must have gonococci as cause." He bases his opinion upon the following points. Says he: "We know that a man can never be cured of a gonorrhea" (in this he takes a far too extreme view) "and that every excess in Baccho et Venere is followed by a reappearance of the clap. Yet the bacteriologists tell us that in the latent state gonococci are absent. Are these industrious little beasts newly formed because a man drinks a glass of beer or indulges in three or four sexual acts instead of one? Why does a woman communicate a clap to one man while six or eight others who have cohabited with her within a few hours escape unharmed? How is it that some men can never have intercourse with a woman, may she be ever so pure, without contracting gonorrhea?"

Using clinical experience as a basis, the author endeavors to dispose of Tait's objections and to bring them into conformity with the gonococci theory. If we make a microscopical examination of gonorrheal secretions, we find gonococci in every fresh case of gonorrhea and also in some chronic cases; but in most chronic cases they are absent, although the discharge is known to be still infectious. Brose divided his clinical cases into two groups. In the first group cases of the following character are found: A young woman contracts gonorrhea eight to ten days after her wedding. She has urethritis, endometritis cervicis, a salpingitis, and perimetritis. The discharge contains numerous gonococci. We examine the husband and find the urethra to be the seat of chronic inflammatory changes, an endoscopic and urinary examination may demonstrate a discharge, yet in only exceptional cases are gonococci revealed by the microscope. Still we are forced to the conclusion that this young woman has been infected by her husband. A good example of the second group reads like this case: A young man consults his physician and asks him to examine his mistress. He says that he cohabited with this woman only and that he believes he has a clap. The woman claims to be in perfect health. An examination shows that the man has an acute gonorrhea, the discharge contains gonococci. The woman has only remote traces of an old gonorrheal infection, and in many cases no pathological changes can be seen. Repeated and careful examinations prove the absence of gonococci.

How can these perplexing phenomena be explained and the

seemingly contradictory statements be proven true?

Bröse mentions that in some cases he found gonococci in the discharge soon after a menstrual epoch. Repeated examinations at other times were not successful. There may also be an obstacle to the discovery of the micrococci in that there are but

few in the secretion and thus are overlooked.

Another explanation is given in a recent publication by Wertheim, and this is undoubtedly the strongest point made. Wertheim shows that only young gonococci are stained by watery solutions of aniline colors, while old cultures do not imbibe the staining fluid. He says "old gonococci lose their typical forms, and thus changed we no longer recognize them as gonococci. They become granular spheres, variable in size and indefinite in outline." Wertheim further writes that this change of form occurs if the culture medium is exhausted and no longer nutritious; and he thoroughly proves the correctness of his hypothesis, because he succeeded in raising typical gonococci by transplanting the aforementioned altered forms into fresh culture media.

In doubtful cases we must make cultures of the suspected dis-

 $^{^{1}\,^{\}prime\prime}$ Die ascendirende Gonorrhoea des Weibes," Archiv für Gynäkologie, Band xlii.

charge; this is the only way to arrive at an absolutely certain diagnosis. The objections of Tait to the specific action of the gonococci, because gonococci are absent in so-called latent cases

of clap, can therefore be satisfactorily explained.

The author next investigated the statements of Tait and Noeggerath, who claim gonorrhea in man to be an incurable disease which always continues to exist in a latent state. Bröse examined the husbands whose wives showed marked or suspicious symptoms of gonorrhea, and he found in nearly every case a circumscribed or diffused urethritis, strictures, abnormal secretions, rarely gonococci. From these investigations he concludes that latent gonorrhea is a myth, and that if a man infects a woman his urethra must be the seat of chronic inflammatory processes. These pathological changes may be very minute, but an endoscopic or urinary examination will, as a rule, reveal their presence. The chronic urethritis may continue for many years, which seems plausible if it is remembered that strictures are often noticed years after the existence of a believed cured clap; but it should also be known that not every clap follows a chronic course, and that most cases of gonorrhea are cured by the usual treatment. Whether a clap is completely cared can only be determined through the endoscope and repeated and careful examinations of the urine. While the genital canal of man or woman is the seat of a chronic gonorrheal inflammation, gonococci in one form or the other are surely harbored in the tissues, at times mingling with the secretions, causing and spreading new infection. Therefore persons who have a chronic gonorrhea are capable of infecting others. But in gonorrhea, as in other infectious diseases, there exists a peculiar predisposition in different individuals. If an individual once has gonorrhea, this attack increases his liability to successive attacks, and we therefore frequently hear that men who have had gonorrhea always suffer from a fresh outbreak whenever they have intercourse with a puella, nearly all of whom are afflicted with chronic gonorrhea. However, the author does not agree with Tait's view that a man can contract a gonorrhea from a pure and uninfected woman.

This variable disposition to clap also explains Tait's objections to the gonococci theory, based upon the fact that a woman may infect one man while others who cohabit with her within a few hours escape unharmed. The cervix is the point most frequently infected. Here the few scattered gonococci, because infection is generally spread through chronic gonorrhea, are deposited mingled with the ejaculated semen. From the cervix the infection spreads to the vagina and vulva. A primary infection at the introitus vaginæ is only produced by a very acute clap. As has been mentioned before, Bröse says we cannot easily distinguish a simple cervical catarrh from a gonorrhea, and that neither microscopical nor macroscopical examinations of the

secretion are sufficient to form definite conclusions. Gonorrheal disorders of the uterus are very frequent, and every cervical catarrh, especially if found in nulliparæ, should arouse suspicion. He believes most cases of so-called puerperal catarrh gonorrheal in nature; and the fluor albus of virgins often due to the same cause, which, however, does not of necessity indicate that a coitus impurus has taken place, for there are other ways by which gonococci may gain an entrance to the genital canal.

The diagnosis "cervical catarrh" should therefore never be accepted as satisfactory. It is, indeed, more rational to prove a cervical catarrh non-genorrheal than genorrheal in character.

To arrive at a correct diagnosis, bacteriological experiments, while always desirable, are not necessarily demanded. A gon-orrheal infection is accompanied by certain symptoms which, combined with other observations, are sufficient to diagnose most cases and differentiate them from non-infectious catarrhs.

Next to the taking of a complete history, a careful examination of the husband, if the case in question concerns a married woman, is of the greatest importance. The husband should be examined in every case of fluor albus. This will prove many cases to be gonorrhea which at first did not look at all suspicious. Another important link in the chain of circumstantial evidence is a history of ophthalmia neonatorum. Small ulcers at the introitus vaginæ, condylomata, changes in the glands of Bartholin or their ducts, a vulvitis, and last, but not least, a urethritis and an inflammatory condition of the lacunæ of the meatus, are all symptoms pointing to gonorrhea. The chronic urethritis is one of the most constant symptoms, yet, as it is accompanied with but little discomfort, it is easily overlooked. The urethritis is diagnosed by trying to express the discharge in the usual manner and through the endoscope. A catarrhal inflammation of the lacunænear the orificium urethræ externum is typical. Inflammatory affections of the joints and diseased pelvic adnexa should also draw our attention to the fact that an existing leucorrhea is probably of a gonorrheal character. This is especially the case if the pathological changes in the pelvis are not easily amenable to treatment.

Regarding the prophylaxis, the author believes the regular inspection and examination of prostitutes to be insufficient. He rightly says nearly all puellæ publicæ are afflicted with chronic gonorrhea, and their cure is problematic. A far better prophylactic measure is to warn all men who believe themselves cured, because the acute symptoms have passed, of possible consequences. Whether a man is really cured can only be determined through a careful endoscopic and urinary examination; and every man suffering from chronic clap, no matter whether gonococci are found or not, should be cautioned not

to marry until he is really cured.

When treating a woman for gonorrhea we must bear in mind what we wish to attain in a given case, whether we only

desire to relieve the symptoms, such as pain and leucorrhea, or if we can hope to cure the patient, which is, of course, the ideal. In the latter case we must, if she is a married woman, also treat the husband. Should the husband prove to be incurable, which is not at all infrequent, energetic treatment must be avoided, as otherwise the symptoms may be aggravated. In such cases disinfecting douches are prescribed, which, however, will not effect a complete cure.

Acute gonorrhea Bröse treats only symptomatically, ordering vaginal injections of chloride of zinc or sublimate. The urethritis is combated by injecting one- to five-per-cent solutions

of nitrate of silver.

About four weeks after the onset of acute symptoms a more energetic local treatment is carried out. Strong solutions of chloride of zinc are applied to the cervix, but the cavum uteri is let alone, except when we feel sure that the disease has already extended thus far. Disease of the tubes and a history of repeated miscarriages point to this. As a rule a gonorrhea

does not extend above the os internum.

Intra-uterine therapy is not free from danger in acute or chronic gonorrhea. Curetting Bröse considers a very hazardous procedure, and hardly less dangerous and of but little utility is intra-uterine irrigation. If intra-uterine treatment is indicated the author recommends medicated bougies or direct applications by means of Playfair's probes. The inflamed Bartholin glands generally undergo spontaneous resolution; extreme cases may demand extirpation. The chronic urethritis is best treated by applying strong solution of AgNO₃ through the endoscope.

A catarrh of the lacunæ is not amenable to treatment, and cauterization with the Paquelin will be necessary. The treatment of the diseased adnexa the author does not discuss in this paper; this topic will be fully gone into at some future date.

His final conclusions he sums up as follows:

1. That the gonococci are the true cause of gonorrhea is settled beyond all doubt, but a microscopical examination is not always successful in demonstrating their presence, because they may have assumed other forms. Bacteriological investigation by the making of cultures is a reliable and absolutely certain method.

2. Latent gouorrhea, as described by Tait and Noeggerath, does not exist. A careful examination of the urethra will

always reveal inflammatory changes.

3. A diagnosis of gonorrhea can generally be made by a close observation of the clinical symptoms. The careful exami-

nation of the husband is very important.

4. Both the husband and the wife must be treated simultaneously. If the husband is incurable the treatment should be shaped accordingly.

5. When treating a woman for gonorrheal infection our efforts should not be confined to the uterus alone, but the introitus vaginæ must also be thoroughly treated.

J. R.

2. Semb: The Uterine Mucous Membrane in Cases of Uterine Fibroids (Archiv für Gynäkologie, Band xliii., Heft 21).—The uterine mucous membrane has received singularly little attention in this class of cases, and its true condition remains to-day comparatively unknown. Semb, therefore, under the supervision of Leopold, examined the uterine mucous membrane of twenty-three fibroid tumors. The results of this research partly confirm the investigations of Wyder, Campe, Small, and others. He gives a detailed description of each case, and his final conclusions may be briefly summed up in the

following lines:

An hypertrophic condition of the mucosa without inflammation is the first change noticed. This hypertrophy involves particularly the glandular structure, but the stroma also increases in thickness. As the tumor grows secondary changes occur, caused either by direct pressure of the new growth or inflammatory processes. Later the hypertrophy is now replaced by an atrophy, because the growing fibroid distends and presses upon the overlying mucous membrane. Wyder observed an interstitial endometritis in the mucous membrane which was nearest to the tumor, while a glandular hypertrophy was found in the mucosa opposite the fibroid, but this could not be verified by Semb. As to the etiology of fibroid tumors, he in part agrees with Uter, who holds that "the altered endometrium is the primary factor, and fibroid tumors are the result of irritations [von aussenkommende Reize] which produce hyperplasia in the mucous membrane and myomata in the muscular walls of the uterus." The main cause of the menorrhagia and metrorrhagia so frequently accompanying uterine fibroids is an hypertrophy of the uterine muscularis. Changes in the mucous membrane will not cause bleeding if the uterine walls are not in an hypertrophic condition.

Considering the treatment of the bleeding by curetting, it is obvious that the results obtained must vary according to the condition of the mucous membrane. In an hypertrophic endometritis some amelioration of the symptoms will follow the removal of the mucosa with its blood vessels. Yet this improvement is short-lived, as the regeneration of the endometrium is rapid. In an atrophic mucous membrane the curettement is useless.

Semb advocates the removal and microscopical examination of a small portion of the mucous membrane before curetting

In one case a decidedly malignant degeneration of the mucous membrane was found. The uterus was hypertrophic and contained a small interstitial fibroid. Profuse hemorrhages had existed for three years. The mucous membrane was moderately thickened and infiltrated with epithelial cells. Such cancerous changes are extremely rare, but, as they undoubtedly occur, it is advisable to subject the mucous membrane, in cases accompanied by unusual bleeding, to a careful microscopical examination.

J. R.

3. Leyden, E.: Pregnancy complicated by Chronic Disease of the Heart (Zeitschrift für klinische Medicine, Band xxiii., Hefte 1 und 2).—Pregnancy and labor subject the heart to manifold dangers. The hypertrophy of the left ventricle and the acceleration of the pulse in the latter months of gestation prove an increased heart's action in the pregnant woman, oftentimes strained at the time of labor to its utmost working capacity.

Simultaneous with greater demand upon the heart by the increased respiratory function, kidney action, and circulatory changes, the organ has to perform its work in a lessened space through the encroachment of the pregnant uterus. While women in perfect health overcome these difficulties without much discomfort, to those suffering from cardiac disorders pregnancy and labor may have serious consequences. The most critical time is during labor and the period immediately following. It is then that we have to fear the heart failure to which the patients generally succumb or at best slowly recover from. Of all the cardiac lesions the chronic forms are the most serious, and of these again mitral insufficiency and mitral stenosis are the ones especially to be feared. Leyden reports twenty cases of pregnancy complicated by cardiac disease, of which fifty-five per cent ended fatally.

The author says that it is the duty of the physician to warn women with cardiac disease against contracting marriage, and, if the patient be a married woman, to guard against conception.

If a cardiac lesion should not respond to treatment, an immediate interruption of gestation is not only justifiable but absolutely essential.

J. R.

4. Franqué, Otto v.: A Contribution to the Pathological Anatomy of Endometritis exfoliativa (Zeitschrift für Geburtshülfe und Gynäkologie, Band xxvii., Heft 1).—Reviewing the literature of this subject, Franqué finds that the question whether the product of a dysmenorrhea membranacea can, with the aid of the microscope, be differentiated from the decidua of an abortion or extra-uterine pregnancy, is still under dispute.

Some authors claim that the presence or absence of the characteristic decidua cells is an important diagnostic point; others, of equally good authority, deny this. To investigate this interesting problem Franqué examined the expelled uterine mucous membrane in five cases of endometritis exfoliativa; in all of these cases pregnancy could with absolute certainty be

excluded. The results of this investigation, which is of considerable forensic importance, are, briefly stated, the following:

1. The cells of a decidua vera, compared with the mucous membrane of a dysmenorrhea membranacea, are identical in size and other peculiarities.

2. Changes in the epithelial cells, extravasation of blood, and

deposits of fibrin are present in both structures.

3. While there may be exceptional cases, it was, in those under investigation, not possible to make with the microscope alone the differential diagnosis between extra-uterine pregnancy, dysmenorrhea membranacea, and early abortion.

J. R.

5. WINTER: THE RECURRENCE OF UTERINE CANCER (Zeitschrift für Geburtshülfe und Gynäkologie, Band xxvii., Heft 1).—Neither through laparatomy, the sacral method of extirpation, nor the removal of the uterus with the aid of clamps can a permanent cure be expected if the disease has extended beyond the uterine body. The recurrence of cancer is effected in three ways:

By local or wound infection.
 Through the lymphatic system.

3. By metastatic deposits in the lung, liver, etc.

The last group of cases is rarely met with in uterine can-Out of two hundred and two cases purely metastatic recurrence was observed in only nine cases. The reappearance in the lymphatic glands is also not common; Winter found it twice in forty-four cases. The glands affected are the inguinal, the iliac, and the retroperitoneal. It is difficult, if not impossible, to prevent recurrence in the lymphatics, because a thorough removal of the glands, as practised in the cleaning out of the axilla in mammary cancer, is, for obvious reasons, impossible. The malignant growth most frequently returns in the cicatrix. It may be caused by small portions of diseased tissue left in the vicinity of the operating wound; out of fifty eight cases of cancer of the cervix, Winter found this mode of recurrence fiftyfour times. In these cases we find the disease circumscribed in character, and as it spreads it acts as a primary growth extending through the broad ligaments toward the sacro-iliac joints, while the Douglas space and anterior pelvic connective tissue are not invaded.

Although we are in many cases helpless to prevent the reappearance of the cancerous growth, better results would certainly be obtained if greater care were exercised in keeping the disease from coming in contact with the healthy tissues at the time of operation.

Small particles may be inoculated into the tissues through the hands of the operator or the instruments. Although a cancer bacillus is not as yet discovered, clinical experience points clearly

to the protozoic origin and the infectious nature of cancer. The means which Winter advocates to diminish the frequency of recurrence are:

1. Early operation.

2. Handle the diseased tissues as little as possible.

- 3. The instruments which have been used to grasp or cut the cancerous masses should not come in contact with the healthy tissues.
- 4. Frequent irrigation of the field of operation with antiseptic fluids.
- 5. Before attempting the extirpation of the uterus the cancerous masses should, as far as possible, be removed with the sharp spoon, and if the growth is in the uterus the os is to be closed by sutures.

6. Tissues which are at all suspicious, but which cannot be removed, should be thoroughly cauterized by the Paquelin cautery.

J. R.

6. Fernandes, G. R.: Amputation of a Gravid Uterus and its Appendages (Arch. de Toc. et de Gyn., 1893).—The presence of three large myomatous tumors, one in the left iliac fossa, the second near the umbilicus, and the third projecting into and completely closing the vagina, were the complications found by Fernandes in a case of advanced pregnancy. At term Porro's operation was decided upon and preparations made accordingly. The eve of the day set for the operation the membranes ruptured, the waters escaped, and the cord prolapsed. The death of the fetus allowed of a change in the operation, since it was no longer necessary to extract the child before re-

moving the uterus.

A deep incision was made upon the linea alba, extending from the umbilicus to the pubis. A second incision opened up the intramuscular space, and a third cut through the remaining tissues. The upper tumor was found to extend so far beyond the umbilicus that it was impossible to extract the uterus through the opening made; this was therefore enlarged upward for about three inches, when the uterus was easily lifted out of the abdominal cavity. Fortunately, contrary to the doctor's preconceived opinion, the lower tumor was quite free from the cervix, thus permitting the formation of a small pedicle. A continuous catgut suture was made through the broad ligaments (a procedure which Fernandes considers more secure than ligature of the uterine and utero-ovarian arteries), and they were cut through with the scissors; the uterus was removed and opened, and unsuccessful efforts made to resuscitate the fetus.

The pedicle was next cut into a cone shape, and the cervix cauterized with the thermo-cautery and washed with a strong carbolic solution. The various tissues were then united by layers with a continuous catgut suture. In joining the abdominal

walls four deep stitches were taken, the catgut being fastened around pieces of rubber. Twenty-three stitches with carbolized

silk brought the integument together.

The whole operation, from the beginning of anesthesia to the completion of the last stitch, lasted one hour and twenty-five minutes, of which fully twenty minutes were devoted to external cleansing and disinfection. The loss of blood was very slight. During the operation there were some circulatory and respiratory disturbances, for which morphine and oxygen were administered. The abdomen was washed with a solution of bichloride, dressings of iodoform, borated cotton, rubber, and flannel were applied, and absolute rest enjoined. Slight elevation of temperature and a rapid pulse occurred the same evening; vomiting was averted by the administration of cracked ice; a vaginal hemorrhage was controlled by an injection of bichloride solution and a tampon of iodoform gauze. After the fourth day the temperature was normal until the thirteenth day. On the seventh day the dressing was removed, and it was found that the deep stitches had suppurated. The author has come to the conclusion that carbolized silk does not become asentic by boiling in a bichloride solution, and that its paraffin wrapping may become a vehicle for the entrance of microbes.

On the seventeenth day it was decided, on account of a daily rise in temperature, to make an incision as far as the musculoaponeurotic tissues, where were seated two of the deep stitches. A small amount of pus made its exit the next day; drainage and antiseptic injections were applied. One month after the

operation the patient was completely restored to health.

Although the temperature and respiration were for the most part normal during this month, the pulse was constantly rapid—about 110 and sometimes 120. Fernandes holds a theory of his own in regard to this phenomenon. In spite of all precautions some débris is always left in the abdominal cavity after such an operation. The phagocytes remove these fragments, which sooner or later enter into the circulation, and, as the process has to be rapidly performed, the circulation is naturally accelerated.

In justification of his operation the author states:

1. That the nature of the tumors prevented the possibility of their being reduced by softening or by pressure of the fetal head, so that it was inadvisable to wait in the hope that more advanced labor would produce a good result. These tumors had, on the contrary, shown a constant tendency to increase in size. Pozzi, in his "Treatise on Gynecology," calls attention to the fact that tumors sometimes soften and permit of the completion of labor, but adds: "The mother usually succumbs to exhaustion when she does not die of hemorrhage." The upper of these three myomata extended about four and a half inches beyond the umbilicus and was five inches in diameter; the middle tumor was three inches in diameter; the third, about the size of

Table showing Results of Supravaginal Amputation of the Gravid Uterus (Pozzi), with the First Operation performed in Lisbon.

Ecbruary 10th, 1882
Arch. f. Gyn., B. 27, 1890 Cent. f. Gyn., 1890, p. 67 January 8th, 1892

a walnut, was situated to the front and a little to the left of the uterus.

2. Cesarean section in the case of complicating myomatous tumors has, according to Casin, a mortality of seventy-six per cent; according to Sänger, eighty-seven per cent. According to Pozzi the mortality of supravaginal amputation of the gravid nterus is thirty-one per cent. The results of Fernandes' operation, performed under especially bad conditions, after twenty hours of labor, rupture of the membranes and prolapse of the cord, under conditions favorable to peritoneal infection, should, he thinks, reduce the percentage to twenty-uine. Moreover, simple Cesarean section would have left the myomata in place and the patient exposed to the danger of future gestation, unless, indeed, the operation of myomeetomy, of long duration and problematic result, had been undergone in addition.

3. Ovariotomy following Cesarean section, for the purpose of causing obliteration of the tumors, would not have been justified

by the results as reported of that operation.

The author, in conclusion, gives various reasons for his operative procedures.

A. R. S.

7. Charpentier, A.: The Treatment of Eclampsia (Nouv. Arch. d'Obst. et de Gyn.).—In 1872 Charpentier made an extensive study of the methods of treatment of eclampsia then in vogue. These were the antiphlogistic, the anesthetic, and the obstetrical. The first, which consisted of local or general bloodletting, resulted in a mortality of 35 per cent. The second, consisting of the use of chloroform or of chloral, gave in three sets of experiments a mortality of 33.3, 50, and 11 per cent respectively. The obstetrical treatment in four sets of observations resulted in a mortality of 37.3, 47.82, 20.75, and 24.51 per cent when surgical intervention terminated labor which had begun spontaneously, 44.82, 22.58, 33.61, and 35.76 per cent when labor was prematurely induced. In 1883 the use of chloral in these cases had become very general; when used in conjunction with bleeding the mortality was 9.01 per cent, when used alone 4 per cent—showing a decided superiority to other methods of treatment.

Charpentier agrees with other authorities that when labor has once commenced its termination should be hastened by the forceps, or by version and extraction, when it can be done without injury to the maternal parts. He is not an advocate of prematurely induced labor, and is decidedly averse to forced labor. The former should be reserved for very exceptional cases. He bases his belief upon the following facts:

Eclampsia, as a rule, occurs a few days before term or at the onset of labor. When the latter is the case, labor usually progresses with great rapidity, sometimes with precipitancy. Eclampsia being merely a symptom of auto-intoxication, evacuation of the uterus cannot cause its disappearance. Granted that albuminuria and eclampsia are related as cause and effect, evacuation of the uterus may ameliorate the condition, but not cure it, as it depends upon a renal lesion which persists for some time after labor. In many cases eclampsia declares itself only after delivery. The induction of labor requires an amount of time which is longer than that of the eclamptic attack. Any excitation of the uterus usually suffices to cause the convulsions. The maneuvres necessary to the induction of labor might readily bring on an attack of eclampsia.

The fetus often dies during the first convulsive seizures, a lull of several days occurs, and then, as a rule, labor is normal and unaccompanied by eclampsia. Operative interference is always regarded as a complication of labor, and is doubly so in

the case of patients threatened with eclampsia.

Forced labor is a source of danger to both mother and child, and should be resorted to only in cases where all other methods have failed. The same may be said of Cesarean section. The mortality from the use of chloral being much less than in all other forms of treatment, it should be the standard method.

Besides these theoretical objections to induced labor, the author adduces many interesting statistics to prove that the mortality is too great to allow of its being resorted to except as

an extreme measure.

The antiphlogistic treatment, having fallen for a while into disuse, has again several supporters. Charpentier believes that it may render good service in cases where congestive symptoms of lungs or of brain are prominent. If it does not suppress

eclampsia, at least it notably diminishes the convulsions.

Chloroform and chloral are the two agents employed in the anesthetic form of treatment. Charpentier does not consider the prejudice of German authors against these agents well founded, and discusses at some length the proposition of Dührssen and others to prove the dangers of their use. Even admitting chloroform to be harmful, chloral, he maintains, is not. It is not absolutely innocuous, but the benefits conferred outweigh the drawbacks. Its administration by the stomach exerts a sedative and hypnotic action without causing absolute anesthesia. Repeated doses may cause some irritation of the gastric mucous membrane, but if given in a sufficient amount of a syrupy vehicle this may be avoided.

Injected intravenously chloral causes complete anesthesia without a preliminary stage of excitement. It may, and sometimes does, cause respiratory syncope. It has never, in any of Charpentier's laboratory experiments, caused any emboli, nor any symptoms of such an accident, as fatty degeneration of any internal organ. He considers that chloral has heretofore been given in too small doses. His own method of treatment is as

follows:

An enema of one drachm of chloral in about two ounces syrup of quince is administered, and, if rejected, is repeated until tolerated. A rest of five or six hours follows, after which a second injection is given, and, after a second rest of the same duration, a third injection. Should the eclamptic attacks be diminished in frequency by the first enema the doses are given less frequently; should they be increased the doses are given in more rapid succession—one patient having received over three drachms in ten hours.

He never allows the administration of chloral to be abruptly terminated, but gives an injection containing one drachm at the end of the twenty-four hours following the first attack. After that every two or three hours a teaspoonful is given, by the mouth, of a potion composed of forty-five grains of chloral to four ounces of a mueilaginous mixture. Delaunay and Froger have pushed the dose of chloral as high as five drachms. Charpentier has the patient take as much milk as possible.

As a usual thing labor occurs spontaneously. Should it be prolonged, which is rare, he waits until dilatation is complete and the head upon the perineum, when he terminates it by the application of forceps. In cases of breech presentation he extracts the fetus as soon as possible without danger to the

mother.

In conclusion he sums up as follows:

1. Should there be even a trace of albumin in the urine of a pregnant woman, put the patient at once upon a rigid milk

diet, which is the best preventive treatment of eclampsia.

2. In cases of eclampsia, should the patient be strong, of full habit, and eyanosed, bleed to the amount of about sixteen ounces. Then follow the chloral treatment as given above, administering milk as soon as possible.

3. Should the patient be delicate, the cyanosis not marked, the attacks infrequent, limit the treatment to the administration

of the chloral.

4. Let labor commence spontaneously and terminate without

interference when possible.

5. Should the uterine contractions be too weak to expel the fetus, apply forceps or resort to version if the child be alive; if dead, resort to cephalotripsy, basiotripsy, or cranioclasis.

6. Before intervening, wait until dilatation is complete.

7. Prematurely induced labor should be reserved for the few exceptional cases when all other treatment has failed.

8. Never resort to Cesarean section or forced labor, especially labor brought on by deep incisions of the cervix.

A. R. S.

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ORIGINAL COMMUNICATIONS.

COMPARATIVE MICROSCOPICAL STUDIES OF THE OVARY.

BY

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(With eight illustrations.)

III. "SMALL CYSTIC DEGENERATION OF THE OVARY."1

The title of my paper, "Small Cystic Degeneration of the Ovary," requires a few words of explanation, as the term is, in the eyes of most of us, an obsolete one. Years ago when abdominal surgery was in its infancy, when the histology and pathology of the ovary were but little more than conjectures, we met with this expression frequently to denominate a condition in the ovaries which varied greatly from the appearance of a normal ovary. As our knowledge advanced in the study of minute anatomy this collective term was recognized as too vague, not precise enough to be in accord with our modern

¹ Read before the Section on Obstetrics and Gynecology of the New York Academy of Medicine, January 25th, 1894.

nomenclature. We also found that some of these small cysts could constitute a part of a healthy ovary, having a certain physiological significance. Again we have learned that some occur under pathological conditions in ovaries and are themselves a source of ailment which may sooner or later require our attention. While I admit that with the establishment of the sexual activity an increased amount of the follicular liquid is physiological, even necessary to facilitate ovulation, I would look upon cases in early life presenting the same features as pathological, something conducive to disorder. We must consider as anomalous conditions developed in young girls which are not usual to that stage of life. In the ovary of the newly-born the ovule is normally embedded in its follicle without any sign of liquid; the same condition exists in the young girl up to the time of puberty. All the numerous cases where cystic ovaries are found in the fetus, the infant, and the young girl are therefore pathological. For these cases we may claim the term "small cystic degeneration" as appropriate, while for those developing during the sexual activity the term hydrops folliculi would be proper.

The small cystic degenerated ovaries of the young girl may not produce any symptoms up to the time of puberty. At this time, under the stimulus of the approaching ovulation, the congested organ is ready to respond to any injurious influence which it may feel. These are the cases every one of us has met with, where we have been forced, after prolonged palliative treatment, to examine our patient, only to find a sensitive ovary, enlarged from four to six times its natural size, low down in

Douglas' pouch.

The hydrops folliculi may remain physiological for the rest of the sexual life, provided that the ovary does not become involved in an inflammatory trouble. Oophoritis accompanied by peri-oöphoritis will change the image. The pseudo-membranous thickening of the theca ovarii, or the close approximation of a pelvic exudate, will render the rupture of these hydropic follicles impossible. Each one of them constitutes now a retention cyst filled with a serous fluid ready to admit and nourish invading pathogenic germs. In all retention cysts the serous fluid increases considerably, and, pressure being exerted upon the cyst walls, these often become thinned, producing multilocular cysts. The walls of these cysts at last may break down and render the originally multilocular a large unilocular cyst. Under such conditions the Graafian follicle has lost its normal character, the ovule usually being destroyed.

From what has been briefly stated it follows that the term small cystic degeneration may apply to hydrops folliculi under certain conditions. I, however, propose to show that there are other sources productive of small cysts. I have detected peculiar changes in the epithelial lining of the follicle, both in women and animals, which I am inclined to consider as a rather fertile source in the production of cysts. This change may involve the follicle at any stage of its development; and since it is of common occurrence in the ovaries of animals, I would infer that the process is of a physiological rather than a pathological type, leading to an involution of the follicle with an ultimate destruction of the ovule. That this process is not able to disturb the normal functions of the ovary is distinctly proven by the fact that in

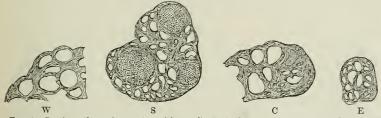


Fig. 1.—Sections through ovaries with small cystic degeneration, in natural size, W, segment of ovary of woman; S, ovary of sow, containing three corpora lutea; C, segment of ovary of cow; E, ovary of ewe.

animals with fresh corpora lutea of pregnancy in the ovaries we also meet with small cysts.

Among the few authors who have attempted the study of the process under consideration, Nagel, who has examined the small cysts in the ovaries of the sow, comes to the conclusion that they are either large Graafian follicles or are derived from them.

S. Pozzi, in his "Gynecology," describes an ovary transformed into a number of follicular cysts, of which part were filled with a serous fluid and part by myxomatous tissue. Judging from his illustrations, I would infer that in his case there was cystomyxoma—a condition which may result from a myxomatous change of the epithelia such as I am about to describe.

Sections through ovaries showing "small cystic degeneration" yield a peculiar image to the naked eye (see Fig. 1). Such

sections, or portions of them, look as if honeycombed, leaving between the cavities often a surprisingly small amount of ovarian stroma. The sow's ovary that I have illustrated is conspicuous by the presence of three corpora lutea of pregnancy; between these the stroma is pierced by numerous cavities varying in size from a pinpoint to a large-sized pinhead. In the segment of the cow's ovary, likewise, two remnants of corpora lutea are recognizable, the cysts being considerably larger than in the sow's ovary, approaching in size the human. The trans-

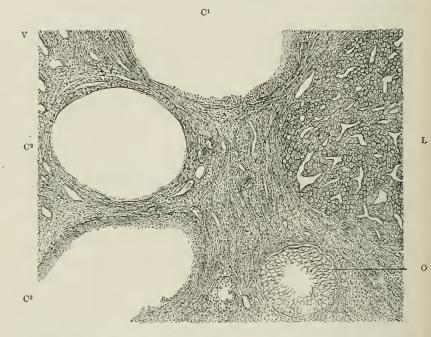


Fig. 2.—Small cystic degeneration of ovary of a sow. \times 65. C¹, C², C³, cystic cavities lined by myxomatous tissue; L, corpus luteum verum, endothelioma; O, remnant of follicle after ovulation; V, blood vessels in the stroma of the ovary.

verse section through the whole ewe's ovary shows cysts quite as large as those of the sow's ovary.

Under the microscope we invariably notice in the walls of the cysts a feature that seems to have escaped the attention of previous observers—this is, that the innermost lining of these cysts is composed of a myxomatous tissue instead of stratified epithelium (see Fig. 2).

This lining may be completely absent, owing to the mechanical injury done in the process of section-cutting; but usually

we find a lining, on an average of the breadth of the epithelial layer, on the inner surface of the wall of a Graafian follicle, but destitute of epithelial structure, as I will prove later. The outer portion of the wall is myxofibrous or fibrous connective tissue with a moderate supply of blood vessels, never exhibiting any signs of inflammation, or even irritation, which plainly proves that inflammation has nothing whatever to do with the causation of such small eysts.

In Fig. 2 I have illustrated a segment of a corpus luteum of

Fig. 3.—Small cystic degeneration of human ovary. \times 125. M, myxomatous tissue lining the cyst; B, blood vessel; E, cluster of epithelia in a medullary condition; C, capsule of fibrous connective tissue; O, ovule in stage of indifference; S, S, bundles of smooth muscle fibres, in transverse section.

pregnancy (L), and near it a remnant of a Graafian follicle after ovulation—a process which, by the way, seems to proceed uninterruptedly during the period of gestation in these animals—nevertheless the cysts in close vicinity to these formations show no reaction whatever in their walls. The nature of the innermost lining of the cyst wall is obviously of the utmost biological interest and can be determined with medium powers (see Fig. 3). We see a tissue widely different from stratified epithelium.

There are large, nucleated, protoplasmic bodies, either coarsely or finely granular, between which a delicate fibrous reticulum is discernible. Very exceptionally we meet with a capillary blood vessel in this tissue holding even blood corpuscles (B). This layer is sharply bordered toward the outer periphery by a moderately dense fibrous connective tissue, producing a capsule around the cyst similar to that of a Graafian follicle, outside of which appears a perfectly normal ovarian stroma characterized by the presence of bundles of smooth muscle fibres in longi-

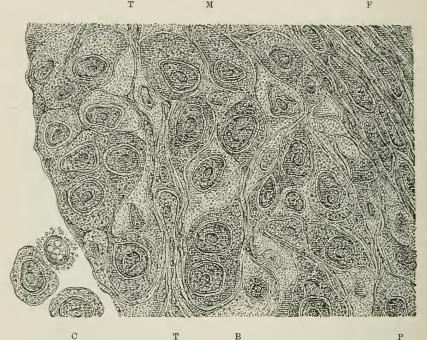


Fig. 4.—Wall of small cyst in human ovary. \times 1,200. F, fibrous cyst-wall; M, myxomatous cyst-wall; P, nucleated protoplasmic body; B, basis substance sprung from protoplasm; T, T, protoplasmic trabeculæ of myxomatous tissue; C, one vacuoled lymph corpuscle and two nucleated protoplasmic bodies.

tudinal, oblique, and transverse tracts. The cavity of the cyst shows a number of clusters suspended in a liquid, which is not recognizable as such under the microscope, though from the absence of coagulated albumen we may infer that the liquid is watery and not albuminous. The clusters are composed of an aggregation of small, globular corpuscles, non-nucleated, and embedded in a mass of finely granular protoplasm.

There is no doubt that these clusters are of epithelial origin, representing epithelial tissue in a stage of indifference, therefore embryonal. The same stage is present in the primordial ovule, invariably preceding the multiplication of the epithelial lining first of the ovule and later of the Graafian follicle.

In the cyst under consideration we therefore have remnants of epithelial tissue, though this tissue is nowhere seen in full development. Small clusters of indifferent epithelium or isolated corpuscles belonging to the same tissue are seen hanging around the inner lining of the cyst wall. This latter fact I wish to emphasize, since I will utilize it for the explanation of the genesis of the tissue of the inner wall. The same specified cyst I have used for the study of the tissue under consideration with the highest powers available, having at my disposal a homogeneous immersion lens 0.2 of Zeiss and a brilliant water immersion lens $\frac{1}{16}$ of Tolles (Fig. 4).

We notice large, distinctly nucleated protoplasmic bodies of varying shape. Two varieties of such bodies are visible, one being coarsely granular and therefore rather prominent, the other finely granular and pale. In both forms the reticular structure of the protoplasm is seen, being established by an interconnection of the granules by means of delicate threads. This feature is far more pronounced in the coarsely granular bodies than in the paler ones; in both forms the nucleus is plain, although in the pale fields the nucleus likewise may be pale and faintly indicated to such a degree that here and there only a trace of it may be found. Around each nucleus and nucleolus a light rim may be seen, invariably traversed by conical spokes in a radiating direction. Obviously we have before us different stages of protoplasmic formations, the pale ones representing a transformation of protoplasm into basis substance. .That this is myxomatous, therefore of the connective-tissue type, is the more certain, since between the protoplasmic bodies we frequently find elongated, mostly spindle-shaped tracts provided with nuclei of their own, known to be the trabeculæ of myxomatous tissue. This tissue is sharply defined outward next to the fibrous capsule of the cyst, and terminates inwardly with a rather sharply marked trabecular tissue similar to that traversing the myxomatous layer under consideration.

Another question of the utmost importance is, Wherefrom has this tissue originated? There are two possibilities: one, that the

myxomatous tissue has taken origin from an outgrowth of the connective-tissue capsule of the cyst; the other, that the myxomatous tissue is the outcome of transformation of the previous epithelial lining. After careful study of a number of specimens I have reached the conclusion that the latter is the case, for the following reasons:

First, the myxomatous zone always corresponds in its breadth to that lining the inner surface of a normal Graafian follicle

approaching maturity.

Second, the fibrous cyst-wall is, without exception, sharply defined toward the myxomatous layer, and no transition of one into the other can be made out.

Third, whenever myxomatous tissue is found, an epithelial lining toward the central calibre is invariably absent; the myxomatous tissue forms the inner lining of the cyst-wall.

Fourth, in the cavity of the cyst we frequently meet with remnants of epithelia, never in full development, but always in embryonal condition, consisting of small, nearly homogeneous nuclei embedded in a scanty amount of protoplasm. This embryonal or indifferent condition of epithelial tissue is invariably present when from an already formed epithelial tissue new derivations of it are beginning to appear. Such is the case when ever an epithelial new growth occurs in the development of the Graafian follicle, leading from a primordial ovum, lined by a single layer of flat epithelia, to a fully formed Graafian follicle with stratified epithelium, both at the inner surface of the follicle and around the mature ovum.

I do not hesitate to say that in the production of small cysts the stratified epithelia lining the Graafian follicle are indirectly transformed into myxomatous connective tissue, although I am aware that some histologists will not admit the possibility of such a transformation. The reasons against such an occurrence are merely theoretical, lacking proof. The epithelium is said to be a derivation of the epiblast and hypoblast, and is thought to be a tissue of its own, which would never change into connective tissue, a derivation of the mesoblast.

Rabl has shown that all embryonal formations originally arise from epithelial formations—i.e., the ovule and spermatozoids. A number of instances are known in which epithelial tissue is transformed, either in a physiological or pathological process, into connective tissue. The epithelial enamel organ is myxo-

matous when fully developed. The thyroid body, originally an epithelial formation, in its involution contains no more epithelia, but a myxomatous lymph tissue. The epithelia of the Fallopian tube have been demonstrated to transform into decidual elements of the connective-tissue type. In pathological processes I allude to the transformation of epithelia into elements' of sarcoma, of a transmutation of the epithelia in glandular organs to connective tissue in the process of chronic interstitial inflammation, etc., etc.

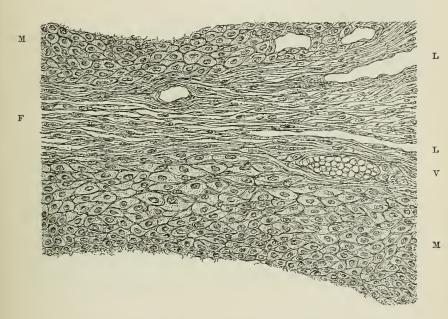


Fig. 5.—Small cystic degeneration of overy of a sow. \times 200. M, M, myxomatous lymph tissue lining the cysts; F, myxofibrous tissue, the septum between two cysts; V, vein in septum; L, L, lymph vessels.

In our own specimens we frequently meet with a change of epithelia into indifferent or embryonal protoplasmic bodies entirely destitute of an epithelial character. Such a change is illustrated in Fig. 4, C.

In different animals the type of the myxomatous tissue is somewhat at variance, though always recognizable as such. In the sow's ovary this tissue holds nuclei looking exactly like those of epithelia in a stage of indifference or like lymph corpuscles. The reticulum of the myxomatous tissue is extremely

delicate, and the protoplasm around the nuclei filling the meshes of the reticulum is almost everywhere finely granular—viz., transformed into myxomatous basis substance (Fig. 5). In the ewe's ovary the myxomatous reticulum is mostly of a protoplasmic nature, lacking as yet the aspect of fibres. The graceful meshes thus produced are filled with a finely granular basis substance, containing in their centre either solid nuclei or nucleolated protoplasmic bodies. In this animal the small cysts frequently exhibit in their calibre clusters of epithelia in an



Fig. 6.—Small cystic degeneration of ewe's ovary. Myxomatous wall of cyst. \times 600. T, T, protoplasmic trabeculæ of myxomatous tissue; P, P, protoplasmic bodies in the meshes; B, B, basis substance, finely granular; E, epithelium of follicle in stage of indifference.

indifferent stage (Fig. 6). A peculiar feature of the ewe's ovaries which I have examined is that all the small cysts seen in a given section show exactly the same height of development of the myxomatous lining of the cysts, without early stages, as seen in human ovaries, and without symptoms of a retrograde change of the myxomatous tissue by liquefaction. All the small cysts contain remnants of epithelia, but no coagulated albumen, usually observed in mature Graafian follicles of normal structure.

In the cow's ovary the myxomatous tissue, the lining of small cysts, is a beautiful lymphoid structure. It is composed of a branching or stellate protoplasmic reticulum, as we see in lymph ganglia and lymph tissue generally. The meshes, where untorn, are filled with a finely granular basis substance and with protoplasmic bodies exhibiting all phases of development. Some of these bodies are solid or vacuoled, of high refraction but small

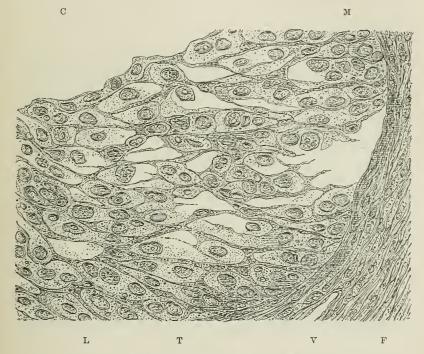


Fig. 7.—Small cystic degeneration of the ovary of a cow. Myxomatous lining of cyst. $\times 500$. F, myxofibrous capsule of cyst; M, myxomatous tissue replacing the epithelial lining; T, protoplasmic trabeculæ; L, lymph corpuscles; C, cavity of cyst; V, capillary blood vessel.

size; others are large and nucleated; many of these again are seen in transformation to basis substance (see Fig. 7). The four cows' ovaries that I have examined microscopically, were conspicuous by the small number of cysts in comparison with the ovaries of the sow and the ewe. I once more wish to draw attention to the fact that the myxomatous tissue lining the small cysts in the cow's ovary, as well as in the ovaries of the other animals, is sharply defined from the fibrous cyst-wall, and that

I was unable to discover a transition of the fibres into the myxomatous tissue in a single instance.

Capillary blood vessels I have seen in the myxomatous lining only seldom, and I can say that the vascular supply of the tissue under consideration has always been found to be scanty. Since I was unable to trace the development of blood vessels in the myxomatous tissue, it seems to be most probable that the blood vessels have grown into the myxomatous tissue from without by sprouting.

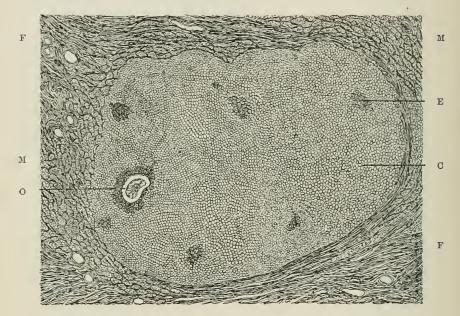


Fig. 8.—Ovary of woman. Cyst filled with blood, containing an ovule. \times 50. C, clot of blood filling the cavity of the cyst; E, remnant of the epithelial lining of the follicle; O, shrivelled ovule, with marked zona pellucida and zona granulosa; M, M, myxomatous tissue with hemorrhagic infarctus; F, F, fibrous connective tissue holding blood vessels.

The last question of importance is, Do the small cysts derived from Graafian follicles contain ovules? In all my specimens I have failed to find an ovule, simply because we have no means of fixing the contents of a cyst in such a manner as to permit its cutting, hence the contents became lost.

In one instance in a human ovary, however, I was lucky enough to obtain an ovule in the section, simply because hemorrhagic infarctus had occurred, probably due to the manipulations inevitable with the removal of the ovary. The freshly

escaped blood has here not only infiltrated the myxomatous lining of the small cyst, but also filled the cystic cavity, fixing the ovule. The zona pellucida of the ovule is broader and more glossy than usually found; this may be attributable to the saturation with blood serum. Around the zona pellucida I found a well-pronounced zona granulosa, in which, as well as in the epithelial clusters scattered in the blood, the epithelia are in a stage of indifference (Fig. 8).

It is highly probable that in small cysts derived from previous Graafian follicles the ovules are lost in turn, simply because the linings and the contents of the cyst are different from those of normal Graafian follicles and the viability of the ovule is deteriorated.

The results of my researches on small cystic degeneration of the ovaries may be summed up as follows:

- 1. Small cysts are of common occurrence, not only in human ovaries, but also in those of the sow, ewe, and the cow.
- 2. In accord with the researches of Nagel, I am convinced that the small cysts are original Graafian follicles.
- 3. In a process not exactly pathological the stratified epithelial lining of the Graafian follicle undergoes peculiar changes leading to its disappearance.
- 4. The epithelium first breaks up into an indifferent or medullary tissue, and from this arises myxomatous vascularized connective tissue.
- 5. The type of the newly-formed myxomatous tissue varies in different animals. It may be medullary myxomatous, or myxomatous lymph tissue, or fully developed myxomatous tissue with a well-marked basis substance.
- 6. The newly-formed myxomatous tissue is always scantily supplied with blood vessels, which probably grow into it from without.
- 7. The myxomatous lining of the cyst-wall is always well defined toward the outer fibrous coat, the original capsule of the Graafian follicle.
- 8. The ovule is present at the beginning of the formation of a small cyst; later it probably perishes, owing to the changed environments.

39 West 52D STREET.

SYMPHYSIOTOMY.1

 $\mathbf{B}\mathbf{Y}$

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Symphysiotomy—division of the symphysis pubis—was first practised on a woman in labor by J. R. Sigault in Paris in 1777, to allow sufficient separation of the pubic bones to admit of the passage of the living child through a contracted pelvis. The fact, already recognized by the ancient authors, of the relaxation of the pelvic joints during gestation, allowing some enlargement of the superior strait during labor, sometimes even to the extent of a rupture of the ligament and division of the joint, led Pinean to hint at, and later Sigault, at that time a medical student, to propose, a division of the symphysis pubis as a substitute for Cesarean section. His first patient and the child survived the operation. From 1777 to 1858 there are 86 cases on record. The operation was then practically condemned and given up by the profession, but was revived in 1866 by Morisani and Novi, of Naples. The only modifications they made in the method were to allow the child to be expelled by the uterine contractions, instead of the rapid delivery by forceps or turning as practised before, and probably to substitute the subcutaneous for the open method as practised by Sigault. During the next twenty years the operation was performed in Naples seventy-six times, but it is only within the last two years that the good results published from Italy have induced France (Pinard, in Paris) and later Germany (Freund, Zweifel, and others) to adopt the operation. The operation was performed for the first time in the United States in Brooklyn in September, 1892, by Jewett.

Method of Operation.—There are two methods—the open method, as employed by Sigault and later by most French and German operators, and the subcutaneous or Italian method. Both operations are of course now performed aseptically.

 $^{^{\}rm 1}\,\mathrm{Read}$ before the Chicago Gynecological Society, December 22d, 1893.

The open method.—Incision in front of symphysis pubis, of varying length according to the amount of adipose tissue. The urethra is kept out of the way by a stiff catheter. The incision should extend upward far enough to allow easy access back of the symphysis, and downward in the median line to the root of the clitoris. Some operators make a deviation to one side. The left index finger is then introduced behind the symphysis from above and a probe-pointed bistoury is inserted on this as a guide; the division of the cartilage is then made from above and behind downward and forward. Only when the last fibres of the ligamentum arcuatum are divided is the full extent of separation obtained.

The subcutaneous or Italian method.—Incision in the median line 3 centimetres long, ending 1 to 2 centimetres above the symphysis. Small transverse incisions are made to detach the musculi pyramidales. The left index finger is then introduced behind the symphysis pubis and down to its lower end, and Galbiati's falcetta is slid down on this until its probepointed end can be felt under the pubic arch; the symphysis is next divided from below upward and from within outward.

The centre of the symphysis can be ascertained by finding the spines of the pubic bones. The cartilage is generally prominent. If this is not the case it can be found by raising or lowering the legs, whereby a slight motion of the joint is produced. The joint is not always in the median line, but frequently to one side, generally the left, and is often oblique, most commonly from the right side to the left. This probably explains why some operators have found it necessary to complete the division with a saw. That bony union is rare is proved by Dr. Wehle's examination of 25 female cadavers of different ages up to 70 years without discovering bony union.

The subcutaneous method is simple, gives rise to less hemorrhage than the open method, and the wound can be kept perfectly aseptic. Hemorrhage can be treated by tamponing of the wound and by counter-pressure (tampons) from the vagina.

The open method allows full view of the field of operation and enables the operator to find the best place for dividing the symphysis; it also enables him to see the bleeding points and to ligature, suture, or clamp them. But the wound extending down to the vulvar orifice is exposed to the lochial discharge

 $^{^{\}rm 1}$ Archives für Gynäkologie, Band xliv., Heft 3, p. 536.

and urine and is very difficult to keep aseptic. It is claimed by some that packing is the only reliable hemostatic.

After symphysiotomy Morisani and Zweifel ' recommend non-interference for twelve to twenty-four hours; they consider changes in the fetal heart sounds the only indication for interference. According to Morisani the forceps will be required in only about one-fourth of the vertex cases; spontaneous delivery should be permitted in other cases. He thinks turning ought to be avoided where the head can be made to engage in the superior strait. Garrigues 2 thinks that in most cases the woman should be delivered at once, and in the choice of methods he makes it a rule to use version and extraction if the head is movable, and forceps if it is engaged in the pelvis; he also recommends incision of the cervix, if it is not sufficiently dilated. is considered eruel by some operators to await spontaneous delivery after the operation, on account of the resulting pain and soreness. On the other hand, the advocates of delay claim that there is no noticeable increase in suffering.

Out of 44 modern cases the mode of delivery was as follows:

	No. of cases.	Per cent.
Spontancous delivery	$\begin{bmatrix} 1\\1\\27 \end{bmatrix}$	18.2 2.3 2.3 61.4 11.4
Unknown		100.00

After delivery the early operators applied a napkin around the pelvis. The Italians sew up the suprapubic wound and bring the separated pubic bones together by long strips of adhesive plaster. Zweifel drills holes and sutures the bones together; he formerly used silver wire, but now employs catgut. Most operators drain the wound, after the open method of operating, by strips of iodoform gauze brought out at the lower

¹ Archives für Gynäkologie, Band xliv., Heft 3, p. 527.

² American Journal of Obstetrics, vol. xxviii., No. 5, p. 626.

⁸ Robert P. Harris: American Journal of Obstetrics, vol. xxvi., No. 4.

⁴ Archives für Gynäkologie, l. c.

angle of the wound. Garrigues' considers nothing better than strips of rubber adhesive plaster applied around the trochanters to keep the two halves of the pelvis together; he uses three strips 5 centimetres wide, crossing them on the abdomen above the wound. While they are being applied, and during aftertreatment, the patient should lie with outstretched legs, the knees together and the feet turned inward, as in this position the bones are approximated. According to Zweifel this position also corrects an inclination on the part of the pubic bones to imperfect approximation. Garrigues recommends suture of the soft parts and unites the tendinous tissue in front of the pubic bones with buried sutures, but doubts if this last procedure is necessary. Drainage he considers superfluous. Guéniot has invented a special apparatus to press the pelvic bones together, and Pinard has had a bed constructed for this purpose.

In regard to the effects of the operation, I shall simply state the most noteworthy observations made upon the living subject

or by experiments on the cadaver.

Effects of Operation.—Zweifel2: When the head passes through the narrow point of the pelvis the pubic bones separate generally from 6.5 to 7 centimetres. Döderlein's (Leipzig): The right pelvic bones yield more easily than the left, and generally the right sacro-iliac joint, if any, is injured. Garrigues': The distance between the middle of the promontory and the end of the pubic bone increases 14 millimetres, and by the presenting part entering into the gap between the divided bones a further 6 to S millimetres is gained, making in all 20 to 22 millimetres. The increase of the other pelvic diameters amounts in some cases to as much as 35 millimetres. There is also an increased vertical mobility. Fehling declares that an increase of 15 to 18 millimetres in the conjugata vera may be expected from the operation, and that, as a rule, one may expect to obtain a conjugata vera of the same length as the diagonal measured before the operation. Ahlfeld has observed that after division of the symphysis the anterior pelvic ring sinks down. To understand that this also will help to make the conjugata longer, it is only necessary to remind you of Waldier's experiments, corroborated

AMERICAN JOURNAL OF OBSTETRICS, vol. xxviii., No. 5, p. 626.

² Archives für Gynäkologie, Band xliv., Heft 3, p. 527.

³ Ibid., p. 532.

⁴ American Journal of Obstetrics, loc. cit.

by Dührssen, which showed that in a lying position with the legs hanging down (Hängelage) the conjugata vera is about 1 centimetre longer than in the dorso-sacral position. Döderlein, after experiments on the pelves of women who died shortly after labor, came to the conclusion that by each increase of one centimetre in the distance between the ossa pubis an increase of about 8 square centimetres is obtained in each pelvic plane. A superior strait of 105 square centimetres would, by a separation of the pubic bones to the extent of 6 centimetres, be increased to 155 square centimetres.

Bad Effects on the Joints.—Baudelocque considered the injury to the sacro-iliac joint fatal when the division of the symphysis reached 6 centimetres, as he shared the erroneous idea of his time that there was a bony union between the two bones, which had to be ruptured. We know now that they are connected by a true joint, and that it is only the capsule of this joint and the strengthening ligaments that are torn, and that this in most cases does not take place until the extent of the division reaches or exceeds 7 centimetres. When it occurs a firm fixation and avoidance of sepsis will generally secure a good union without any trouble. In his experiments on cadavers Dr. Wehle' found great difference according to the patient's age and whether or not she was in the puerperal stage. In advanced age the joints separated upon a division of 4 centimetres between the pubic bones, while in young women shortly after childbirth this took place upon a division of 8 or 9 centimetres. Faulty union of the pubic bones, resulting in impaired locomotion, was one of the great objections to the operation in its early period. Since its revival, and especially during the last six or seven years, failures in this respect are almost unheard of, whether the operator applies bone sutures or only keeps the divided bones in apposition by a firm bandage.

Effects on the Soft Parts.—Injuries to the soft parts—urethra, vagina, bladder, etc.—have occurred and still occur in a number of cases and prove a serious complication. It is probably more reasonable to attribute these injuries to the stretching of the parts between the separated bones than to any direct injury from the forceps or the fetus. To avoid these injuries Zweifel² recommends:

² Ibid., p. 527.

¹ Archives für Gynäkologie, Band xliv., Heft 3, p. 536.

- 1. To spread the legs as little as possible.
- 2. To arrange an elastic fixation of the pelvis by Esmarch's bandage.
- 3. When possible, to await spontaneous delivery; when use of forceps is necessary, not to produce forward traction, but rather to make extensive vaginal and perineal incisions. If the vagina ruptures it must not be sutured, providing the bones are well approximated.

Garrigues' advises the immediate repair of injuries with silk or catgut sutures. A tear in the bladder should be closed with continuous catgut tier sutures, one applied to the mucous membrane, the other to the muscular coat and the peritoneum. A vesico-vaginal fistula heals, as a rule, spontaneously.

In 44 operations of recent' date the results as regards injury to the mother are as follows:

Results as to disability.	No. of cases.	Per cent.
Perfect recovery. No injury to locomotion. Vesico-vaginal or urethro-vaginal fistula. Not stated.	27	11.4 61.4 9.1 18.1

If the symphysis is divided by the subcutaneous method, leaving the soft parts intact, and the bones are then separated to the extent of 7 centimetres, it seems reasonable that the soft parts adherent to the pubic bones on either side must separate from the bones, or tear. That the vagina, bladder, or urethra does not tear in every case can be explained only by the pliability of the anterior vaginal wall. Consequently it seems that to avoid serious injury to the soft parts they should be loosened by the operation from the pelvic walls on both sides far enough to allow sufficient stretch.

Prognosis.—In the case of an operation—that is, in its process of evolution—it is difficult to make out any statistics that will convey a correct impression of the mortality. What is a low mortality to-day may be a high one to-morrow. All we can do is to collect cases and make up the mortality for different years or series of years, for different operators and different methods.

¹ AMERICAN JOURNAL OF OBSTETRICS, vol. XXVIII., No. 5, p. 626.

² Robert P. Harris, American Journal of Obstetrics, vol. xxvi., No 4...

From 1777 to 1858 there are 86 cases on record. In these the mortality to the mothers was 33.72 per cent and to the children 60.5 per cent. From 1866 to 1888 the operation was performed 76 times in Naples with a mortality to the mothers of 23.6 per cent and an infantile mortality of 22.4 per cent. The statistics of Morisani this year show a maternal mortality of only 3.5 per cent and an infantile mortality of only 5.5 per cent in 55 operations. Zweifel has operated 14 times with 14 recoveries and 12 living children. Pinard has operated 20 times with one death. Neugebauer has collected all symphysiotomies on record up to date, 196 cases, with 23 deaths, of which 4 were not due to the operation, making a mortality of 10 per cent.

Varnier, in 124 modern operations, has found a maternal mortality of 9 per cent and an infantile mortality of 22.7 per cent—a combined mortality of 16 per cent.

Garrigues says the operation has been performed 26 times in the United States, with a mortality to the mothers of 15.39 per cent and to the children of 30.77 per cent.

Indications.—Until the best method of operating has been decided upon it is difficult to define the indications for symphysiotomy. The principal indication will be a narrow pelvis (flat or generally contracted pelvis); but it may also find application, and has been used, in cases of faulty presentation of the fetal head—for instance, impacted occipito-posterior vertex presentations or mento-posterior face presentations. An absolute requirement for its performance is that the child be alive.

Symphysiotomy is naturally destined to assume a position between high forceps delivery and version on the one hand and Cesarean section on the other, and is a direct competitor with craniotomy and induced premature labor. When we consider that the maternal mortality from craniotomy and that from symphysiotomy do not differ materially (7.5 per cent for craniotomy and 9 per cent for symphysiotomy, with prospects of the latter being lowered), while the fetal mortality of craniotomy is 100, making a combined mortality for this of 53.8 per cent, and the fetal mortality of symphysiotomy is 22.7 per cent, making the combined mortality for this operation 16 per cent, it seems that symphysiotomy ought to take the place of craniotomy in all cases in which the child is alive. As the life of the mother is always of more importance than that of the unborn child, induced premature labor will unquestionably, on account of its

low maternal mortality-2 per cent-still be preferred to symphysiotomy in most cases where the diagnosis of narrow pelvis is made during pregnancy. The high fetal mortality of induced labor—35.5 per cent—will, however, make symphysiotomy more and more preferable the more its maternal mortality is lessened. Pinard already advocates that a woman with a conjugata vera of 7 to 9 centimetres be allowed to wait till full term and then that symphysiotomy be performed. It is also probable that symphysiotomy will encroach somewhat upon the territory of other obstetrical operations. It was originally introduced to take the place of Cesarean section, and undoubtedly should do so in all cases where the length of the conjugata vera will permit delivery of a living child by symphysiotomy. Its usefulness in this direction may be somewhat extended by combining it with premature induced labor. It will also probably take the place, to some extent, of difficult high forceps deliveries and versions. Pinard, Eustache, and Garrigues consider symphysiotomy preferable to forceps application and version in narrow pelves.

As to the mathematical limits for symphysiotomy, they can be figured out for a child of normal dimensions. As the biparietal axis of the head is 9.5 centimetres, and we can depend on a gain of 2 centimetres by the symphysiotomy and 0.5 centimetre by compression of the head, a conjugata vera of 7 centimetres will be the minimum limit for the operation. The maximum limit, according to most authors, should be placed at a conjugata vera of 9 centimetres for a flattened pelvis, and a maximum limit for a generally contracted pelvis of 10 centimetres. Morisani places the minimum limit at 6.7, Zweifel at 6.5, and Leopold at 6.0 centimetres.

Of 40 modern symphysiotomies the conjugata vera ranged as follows:

Conjugata vera (mm.), 60-64 65-69 70-74 75-79 80-84 85-89 90-94 95-100 Number of cases..... 3 5 15 10 4 0 1 2

The biparietal diameter of the fetal head was as follows:

The difference in length between the two is shown in the following table:

Symphysiotomy, since its resurrection, has obtained remarkable results and has gained numerous advocates in the different countries, and its general adoption by the medical profession as a legitimate obstetrical procedure seems to be only a question of time. Its adoption would necessitate a more general use of the pelvimeter and thereby insure a more rational midwifery than exists at the present time.

The general rules for the selection of obstetrical operations, as modified by the adoption of symphysiotomy, could, I believe, be formulated about as follows:

Length of conj. vera.	10.5-9	9-7	7-5.5	5.54.5	4.5 or less.
Child living	or	labor or	Cesarcan section, or induced labor combined with symphysiotomy.	Cesarean section.	Cesarean section.
Child dead		Crani- otomy.	Craniotomy.	Crani- otomy.	Cesarean section.

These are, of course, only general rules, modifications of which would be allowed in individual cases. The subcutaneous method of operation should, I think, be preferred, as it causes less hemorrhage, is less of a lesion, is better adapted to asepsis, and as the field of operation can easily be laid open, should the necessity arise.

70 STATE STREET.

APHTHÆ AND DIPHTHERIA. THEIR ASSOCIATION AND DIFFERENTIATION, 1

BY
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THE object of this paper is to call attention to the fact that although most if not all our text books scarcely comment on the association of aphthæ and diphtheria, these diseases do occur

1 Read at the January meeting of the Northern Dispensary Medical Society, 1894.

"side by side" or concurrently; and, secondly, although typical manifestations of aphthæ can hardly be mistaken for diphtheria, even after a hurried or superficial examination, in most cases, occasions are not wanting when the mistake may be made by tolerably careful observers; and, lastly, when the two diseases coexist in the same patient, aphthæ may manifest themselves before the symptoms and signs of diphtheria have done so, and thus the benign malady will more or less mask the serious disease. This last fact is not even hinted at by most writers on both diseases, and, although a contingency of not common occurrence, it is of enough importance to be borne in mind.

I. From the days of Hippocrates down to our own, confusing conceptions as to what should be understood by the term aphthæ have been taught by representative authors. Taking the mildness of the malady as it is usually met with into account, along with its accessibility for observation and study, one is at first surprised at this; but the mildness of any disease and its accessibility for study and observation are not always the factors that stimulate most effectually toward getting at its secret or essential characteristics. To discuss and enumerate the factors which have influenced the study and developed the various conceptions of aphthæ at the different epochs of its history is not the object of this paper. But so much of the history of these two diseases may be reviewed as will help us to form a clearer conception of the meaning of this frequently almost insignificant malady—aphthæ. And though it may be interesting enough and hardly exhilarating, some food for modest reflection will fall in our way as we go along.

Bohn states that the confusion begins with Hippocrates; and Galen, who taught five hundred years later, added nothing to the knowledge of the trouble, but left the confusion greater. Indeed, some of this old-time confusion continues into our own day. Billard, who is praised justly and a good deal by Bohn for having brought the conception of aphthe within definite clinical limits, writes of those who taught before him as follows: "The commentators of Hippocrates, Galen, Celsus, and Aretæus have exhausted themselves in vain conjectures to ascertain to what alteration of tissues aphthe are to be referred." And Boerhaave, Van Swieten, Stahl, Armstrong, and Underwood applied the term to ulcers, whatever may have been their

¹ The small figures refer to the bibliography at the end of the article.

origin. Others, such as Sylvius, Mercurialis, Ettmüller, and Pinel, regarded aphthæ as being vesicular pustules with a red border and a white centre. Billard describes his own conception thus: "The projecting points are neither tubercles, as M. Gardien has said, nor pustules, as has been said by others; but they are evidently the muciparous follicles, as their central orifices and unvarying form demonstrate.3 The inflammation of the follicle is sometimes arrested in the first stage, and may remain so for a longer or shorter time without giving rise to any symptom; but as a rule these points enlarge, and a whitish matter spreads from the central aperture over the parts around, and ulceration begins about the same time. The aphthous follicle, once broken, consists of a superficial ulcer with a slightly tumefied, congested, and inflamed border. The whitish pultaceous matter which adheres to the ulcer like a scab exudes from the centre and border (of the ulcerated follicle). The seab or grayish pultaceous matter is finally washed away by the saliva which dribbles from the mouth, and the ulcer is exposed. When the aphthæ are numerous they may coalesce, and the exuded curdy matter then forms a membrane of greater or less extent and thickness." 4 Bohn supplements Billard's description of Boerhaave's and Van Swieten's conceptions of this malady by saying that these great men looked upon this membraniform development as characteristic of aphthæ, but Bohn thinks they were not particularly definite. Billard continues: "When this curdy membrane has formed, the malady has been confounded with thrush (muquet, Soor); but the inflamed follicles and the solution of continuity of the mucous membrane do not exist in the latter disease. Sometimes the borders of aphthous ulcers break down, and the transuding blood, becoming dry, forms brown scabs; then these brown scab-covered little ulcers are mistaken by some observers for gangrenous eschars." Without denying that under certain circumstances follicular ulcers might end in gangrene, Billard believed such a result rarer than Van Swieten, Rosen, Underwood, and many others had affirmed to be the case. So far Billard.

About forty years ago, and about fifteen or twenty years after Billard had clinically defined aphthæ, Bamberger elaimed that aphthæ "must be limited to that inflammation of the mouth characterized by minute circumscribed points of exudation in (not on the surface of) the mucous membrane and its mucipa-

rous glands." These transuded deposits he believed to be of a fibrinous nature, and not located within the confines of the muciparous follicle only, but scattered over the subepithelial mucous membrane generally. These subepithelial fibrinous deposits with their epithelial covering disintegrate, soften, and begin to detach themselves, first at their (the aphthæ) borders, and lastly in the centre, when they are washed away by the saliva and leave a subepithelial mucosa exposed. New epithelium rapidly forms from the borders and quickly covers the exposed surfaces. Bamberger based his views on post-mortem investigations as well as on clinical observation. He was never able to corroborate Billard's statement that the mouth of a follicle could be made out at the points of exudation.

The next author whom we shall quote is Bohn, and he follows Bamberger by about twenty-five years (writing in 1880), and Billard by about forty or fifty. He has written on aphthæ most clearly, fully, and commendably, and he is in touch with our own times. Bohn discards the implication of the muciparous follicles altogether. In this respect Damachino fully agrees with him. Bohn locates the trouble or origin of the pathological process the inflammation—under the epithelium in the superficial layer of the corium. He denies absolutely the vesicular character of this disease, and, holding too rigidly to a gross biopathological definition of ulceration, he denies its ulcerative characteristic too. He claims that aphthe do not develop "purulent disorganization of tissue," and therefore cannot become ulcers. However, he does not deny that tissue disintegration and solution of continuity take place, very superficially of course; and consequently, according to another definition of ulceration, Bohn's contention as to non-ulceration may be fairly rejected, although his definition is not done away with thereby. The late Alfred C. Post, M.D., taught us the following definition of an ulcer: "An ulcer is a superficial solution of continuity due to molecular disintegration." This is a physical rather than a biological definition, and covers the meaning of an ulcer in the result rather than the process or genesis, and in so far is inferior to a biological definition. However, I have seen typical aphthæ develop into ulcers which resulted from "purulent disorganization of tissue," and Forchheimer reports that in two cases in eight "pus formers" were found. These eight cases of aphthæ were carefully examined microscopically by expert microscopists

or bacteriologists, and because "pus formers" were not found in the other six cases Forchheimer pronounces, without further explanation, that the find in the two cases is accidental. The entire pathological process of aphthæ is a very rapid one, and very superficial too as a rule; and it will be well, therefore, to be a little guarded against a too exact biopathological definition of ulceration, at the same time not forgetting that a difference in degree is not one of kind. Bohn pointed out how much aphthous stomatitis simulated acute infectious diseases. He also drew attention to its analogy with eczema and impetigo of the skin, with which diseases he had often found it associated. The subepithelial transudation Bohn found to consist of fibrinous matter and young cells, and blood only when the corium had been injured; but he failed to discover bacteria and fatty matter besides, as others had. Coming into our own day, we find the affection classified by Fränkel as a pseudo-diphtheritic disease, the exudation being fibrinous and with an absence of normal epithelium in the plaque. The seat of the plaque being congested and inflamed, Fränkel found here different kinds of micro-organisms—cocci, especially staphylococcus citreus and flavus, bacilli, yeast cells, and mycelium. But, to quote Ruault, the discovery of the specific micro-organism which generates all the pathological processes which have been observed by the different authors who have been quoted remains a microbiological question awaiting solution.

And now, at the risk of being tedious, the foregoing outline history of aphthæ may be summarized and divided into five periods. The first period comprises the long stretch of years, over two thousand, from Hippocrates to Billard, during which no definite conceptions of aphthous stomatitis were formulated and generally accepted. The second period is typified by Billard's clearly cut clinical description, but explained by a purely hypothetical and erroneous patho-anatomical assumption. third period is a transitionary one, and is marked by Bamberger's modification and partial correction of Billard's pathological anatomy. Bamberger does not altogether exclude the implication of the follicles, but makes the subepithelial mucous surface the seat of the inflammation and localized deposits. The fourth period is characterized by still clearer clinical conceptions and more definite pathological and anatomical notions, which may be stated as follows: A general congested state of the mouth,

possibly, though less frequently, also the throat, ushers in the appearance of firmly dotted points of fibrinous deposit under the epithelium. Although the corium participates in the congestion, the deposit takes place on, but not into, it. These deposits are usually described as varying in size from a pinhead to that of a lentil, and as having a more or less well-marked congested border. According to my own observations-which I have frequently made with the aid of an ophthalmologist's magnifying lens and a reflecting head mirror in good daylight—these deposits are at first all of them very minute points. Very often they can be brought into view by putting the mucous membrane on the stretch, when otherwise they would escape detection even by means of the magnifying glass and reflected light. This would seem to point to a dulness of the epithelial layer of the mucous membrane. Quite rapidly many or only some of these minute points enlarge discretely or by coalescence. In very many instances I could not observe the much-described red border-not even around the larger aphthæ; but at times it was very well marked. However, these little dots may coalesce so as to form serpiginous streaks between the papillæ of the tongue (Bohn), or oval or irregular patches. When the thin saliva is flowing over these little dots of fibrinous deposits a very illusory picture of vesicles is presented; but if the saliva is wiped away, and the parts are then examined in a good light by means of a magnifying glass and a reflecting mirror, a very different picture will be seen. The entire mucous surface will be found to present a dull aspect, and these aphthæ as duller deposits under the immediate surface. Examining by this means, I have never been able to detect any vesicles in the shape of aphthæ. Bohn (and he quotes others who) failed to find any fluid in aphthæ by pricking them. Hence we may conclude that aphthe never begin nor are at any time vesicular. Aphthæ are frequently associated with other mouth affections, especially ulcerated stomatitis, and besides occur along with constitutional diseases and measles, scarlet fever, malaria, and diphtheria, etc., etc. In two hundred cases Bohn found this disease affecting children from 10 months to $2\frac{1}{2}$ years old one hundred and forty times. Bohn's statistics also show the malady to be most frequently met with during the summer and autumn months. The fifth period is the as yet incomplete bacteriological period—our own and the future.

II. Diphtheria and Aphtha.—All of us have seen cases which tallied with what Sir William Jenner teaches, namely: "You may often suspect that the disease is diphtheritic before the exudation occurs, and sometimes be almost certain that it is so; just as in measles or scarlet fever you may venture on a diagnosis before the anatomical character—i.e., the eruption—has appeared." However, in other cases our suspicions remain such until further developments allow us to settle on a trustworthy diagnosis. Suspicions always take much for granted; and although it is always easy to take a diagnosis for granted, it is none the less often a judicious and safe procedure. Diphtheria is always a mean disease to deal with, and the negative bacteriological examination of clinically indefinite cases does not always justify us to "go slow" in our treatment. On the other hand, cases turn up presenting exudative phenomena in the mouth and throat which, whether examined hastily or carefully, may mislead us into the mistake of calling them diphtheritic. Not by any means a serious mistake. Mistakes of this kind have been made much oftener in bygone times than is done nowadays, no doubt. When aphthe and diphtheria and thrush were looked upon as identical diseases such mistakes were necessary and natural. And so when we are studying the statistics and allied matters having to do with diphtheria prior to Bretonneau's and Billard's times, it will be helpful in arriving at true conclusions to bear this in mind. Bohn 10 instances the case of Stark, of Jena, translating and editing a Dutch work on diphtheria about 1784, who shows by his annotations that much of his (Stark's) knowledge of diphtheria was mixed up with a knowledge derived from his observing cases of aphthæ. It has been asserted over and over again that Bretonnean marked the distinctions between diphtheria and aphthæ about 1826. Although the statement is not without some foundation, it is not altogether correct. However this may be, evidence is not wanting that good observers since then up to the present time have been puzzled by some of their cases, for a little while at least, before they could determine whether or not they were dealing with diphtheria. In 1851 Dr. John Grove read a paper on aphthæ, thrush, and diphtheria, and their relations," before an English society. The outcome of the paper was that "in all probability mugnet (Soor, thrush), aphtha, and diphtherite were associated affections depending on a common primary

agent as a cause of disease." Furthermore, Grove argued, "the most curious part of this inquiry is that the more severe diphtherite, aphtha, and muguet are, the more constitutional the other symptoms become allied; whereas in distinct diseases the reverse obtains, for the more marked and characteristic the symptoms of any specific affection are, as a rule, the more clearly defined they become in proportion to their severity."
Confused conceptions of this kind were shared by others at this time, and Grove quotes Bennett to corroborate his views. But even now, though guided by better founded pathological theories and clearer clinical conceptions, observers meet with cases concerning which a satisfactory diagnosis in these matters cannot be immediately formed. Francotte 12 reports five cases which at first he could not positively determine the nature of; finally he pronounced them to be cases of aphthæ, and not diphtheria. This was in 1880. I will briefly quote his Case 5: Boy, 21 months old. Vomiting and diarrhea preceded convulsions. A day or two after the convulsions the parents noticed something wrong with his mouth. The child was seen by Francotte four or five days after the convulsions. He found grayish plaques on the gums of the lower jaw near the incisors, and on the dorsum and under surface of the tongue near its tip. The mucous membrane of the gum of the lower jaw was lightly ulcerated under the plaque. One week later the plaque on the tongue had become thinner and slightly scooped, that on the under surface had thickened. After three more days every sign of a plaque had disappeared. Three weeks after the child's last visit at the clinic, smooth, superficial depressions could be seen occupying the former site of the plaques, which it was supposed marked the ulcerations before mentioned. At the beginning of the trouble the child had fever, and during the course of the malady his breath was only slightly, if at all, malodorous. Some might suspect that Francotte had not made a correct diagnosis of this case. But in this connection Sir M. Mackenzie may be quoted: "When aphthæ become confluent the whitish pultaceous matter which breaks up on being touched can easily be distinguished from the homogeneous, closely adherent, and tough membrane of well-marked diphtheria; but there are some cases which bear a middle ground and are very difficult to differentiate." ¹³ When aphthæ become confluent a late stage, though not the last in their process, has been reached.

Moreover, confluent aphtha are not seen very often. Barthez and Rilliet,14 who claimed never to have seen this form, stated that those who had claimed that that form had been seen really saw diphtheria or a complication of diphtheria and stomatitis membranacea. These writers, excellent as such, were too positive, even in their day, in making diagnoses from observations made by others than themselves. Every eventuality does not turn up (or is not noticed) in the experience of those honoring themselves with the most ample experience. Forchheimer makes the statement—whether based on his own or the experience of others he does not state—that sometimes the whole mouth becomes covered with an aphthous exudation and looks the picture of diphtheritic inflammation. Bohn, whose observations have been numerous, saw only a few such cases. I have seen only one such ease, but this was associated with tonsillitis and rheumatism, and, having been seen from the start, it would not have been easy to have mistaken it for diphtheria. The mouth affection was first, then the tonsillitis, and last the subacute rheumatism. But had this case been seen during the tonsillar stage of its progress it might have been taken for diphtheria. Different writers hit upon different stages of these diseases in their descriptions of them as they occur individually-from the point of view of differential diagnosis-and as they occur associated. This may be due a good deal to the run of their experience and to other causes into which it is not necessary to inquire here. And so Jacobi, writing in 1880, though his description of aphthe disappoints one because it is dominated by the antiquated nomenclature and pathology originated by Billard, presents the subject of the "side-by-side" occurrence of aphthæ and diphtheria, and in a light different from that in which they have been viewed heretofore. Jacobi says: "Stomatitis follicularis can hardly fail to be recognized by the gray discoloration of the superficial ulcerations. Such patches are very numerous in the fauces, and on the lips, on cheeks, and never on the gums except in ulcerative stomatitis which is not follicular. They are accompanied, too, by vesi-eles, containing more or less serum, which have not yet ruptured. It must be remembered, however, that the mucous membrane, when deprived of its superficial covering, is liable to become infected, like every other wound. I have seen eases in which stomatitis and diphtheria existed side by side, the lat

ter having invaded the exposed surfaces resulting from the former." It will have been noticed that Jacobi's description is somewhat unique. His description does not tally with herpetic stomatitis, and we may be sure it is not thrush of which he is speaking. I have never seen the state of affairs whereof he speaks. Furthermore, all so-called ulcers of aphthous stomatitis do not become diphtheritic. My experience rather substantiates Forchheimer's remark: "It is barely possible for the ulcers of this disease to become infected with other processes, but it is fortunately of rare occurrence." 17 Aphthæ affecting the fauces and tonsils seem to be more vulnerable than those found on the tongue, cheeks, and lips, and perhaps here, when conditions are favorable—i.e., when diphtheria is about—the chances of infection are greatest. In a case of mine, reported below, diphtheria existed in the nose, on the tonsils, and on the soft palate, and yet the denuded or ulcerated aphthe on the tougue, lips, cheeks, and floor of the mouth pursued their wonted course, undisturbed by the propinquitous diphtheritic processes. This case was under observation from October 24th to November 12th, 1893, when the child was declared convalescent. The parents of this child are splendidly developed people of Irish descent. The child-a boy-is 22 months old and is still nursed at his mother's breast. The little fellow is quite small for his age, is rickety but not bowlegged, and anemic. The rickets is probably due to bad feeding and insufficient out-door airing. On several occasions before, he had convulsions when teething, but at no time had the convulsions been so severe as at the present time. From 4 up to 9 P.M. (October 24th) he had six convulsive seizures. When first seen he was just recovering from the sixth, was somewhat cyanotic, and the muscles of the face and extremities twitched irregularly. There was no heavy breathing, but the child, though drowsy, could readily be brought to; then he would doze off again. The pupils were dilated, but reacted to light, and there was no pupillary inequality. Rude breathing was found all over the chest, and here and there a large râlenothing specific. The abdomen was swollen and hard. The pulse was rapid, but not otherwise abnormal. Examination of the throat negative by poor lamplight. The child suffered from constipation. The day before (October 23d) he had been allowed to have a good time with several raw apples, bananas,

and pastry. Temperature in the axilla 103.5° F. The child having had convulsions before, the people had administered on this occasion mustard baths, enemata, castor oil by the mouth, and a mixture which was kept ready in the house for emergencies—"to prevent convulsions," the mother said. However, nothing had been done properly for the child's relief. Besides other specific directions and corrections, a mustard poultice was ordered to be applied along the spine, and two grains each of antipyrin and bromide of soda every two hours internally, but not if the child slept. I had hardly left the house when the child had a seventh convulsive seizure.

October 25th I was requested not to call, because it was supposed the child was doing well enough not to need a physician.

October 26th I was asked to call on the child again, because he had fever, and patches in his mouth. The axillary temperature was $100\frac{1}{2}^{\circ}$ F. Aphthæ were found on the tongue, along the edges especially toward the tip, on the dorsum and under surface too, on the inner surface of the lower lip, fauces, and tonsils—the tonsils swollen. The child swallowed without apparent pain. Ordered a borax and glycerin wash for the mouth, and two drops of tinetura ferri chloridi in water every hour.

October 27th I found child playing on the floor with his father; the whitish aphthous patches in great part gone, and where so, superficial ulcers or denudations rapidly healing; the little patches on the tonsils and pharynx dirty-looking, and, when wiped away with moist absorbent cotton, superficial bleeding surfaces are left. There is much dribbling from the mouth, a slightly tainted odor to the breath. There is a slight watery mucous discharge from the nose. There is no cough, no cramp symptoms. Child slept well through the night.

October 28th (fifth day of illness): Child did not sleep well last night. Glands at the angles of the jaws swollen—at the left side much more so than on right side. Dribbling at mouth less than yesterday. Slightly feverish. Tonsils covered by a dirty-whitish patch, and arching up behind the palate on the left side. These patches could be wiped away only partially, and where this was done a raw, bleeding surface was brought to view. The discharge from the nose is thicker from the left than from the right nostril. After syringing about an ounce and a half of borated water through the right nasal passage, a large, clotted, dirty-white mass of muco-fibrinous matter and muco-pus came away, in

quantity enough to fill a teaspoon. This was followed by blood-tinged mucus. Injecting the water through the left nostril caused only purulent mucus to come away from the right side of the nose. The child was very much relieved by the nose-cleaning. The nose was ordered to be syringed every two hours, the iron tincture to be given every half-hour, and the child to be fed on soups, broths, and scraped beef.

October 29th: Discharge from the nose continues mucopurulent, the discharge from left nostril thicker than that from right. The glandular swelling at the angle of the jaw on the left side perceptibly increased. The tonsillar patches thicker and of a yellowish-green tint, but they have not spread; did not attempt to wipe them away. Syringing of the mouth and pharynx, as well as of the nose, continued.

October 30th (seventh day of illness): Child slept well last night, and wants to play around. Patches on tonsils have become smaller, but have spread forward on to the soft palate and anterior faucial pillars—more especially so on the left side. Carl Seiler's solution now used instead of borated solution. Discharge from the nose less puriform and less in quantity.

October 31st: Child coughs as though it were whooping cough—had whooping cough four months ago; coughs up a tenacious, puriform mucus. Child is not hoarse, breathes easily, has a moderate bronchitis. A laryngoscopical examination is impossible. The same treatment is continued.

November 1st: Child feels well, but coughs much and with a whoop. Coughs and whoops when he gets excited. Irregular small patches on the tonsils and faucial pillars. Glandular swelling at angles of the jaw almost gone.

November 2d (tenth day of disease): Diphtheritic patches on the right side of the fauces all gone, and almost so on the left side. Nasal syringing kept up into the nose and mouth, but at longer intervals. Child during last two nights was awakened only once to clean the nose and throat; on previous nights he had been syringed into the nose and mouth every three hours. Mucus from the nose now almost white, and thick. The cough and whoop are less, and there is no hoarseness.

November 6th: Child coughs much, but there is very little bronchitis. He is not hoarse. No discharge from the nose. Syringing the nose now brings away only clear mucus. On the centre of the left tonsil a small, membranous patch persists, but is removed by a solution of papoid, a bleeding surface remaining. The child has a good appetite, is constipated, and coughs up a yellowish-green mucus which probably comes from the pharynx, larynx, and trachea.

November 10th: The child is doing well in all respects. December 31st: The child has had no paretic symptoms.

A number of interesting speculations might be based on the case just narrated, but, having already drawn liberally on your kind, indulgent attention, I will close this paper by directing your attention to two or three points relating to the two subjects that have been discussed, and which the case just narrated illustrates. In the first place, the origin of the case was ordinary enough. A rickety, over-indulged child is seized with convulsions. After the bowels had been cleared and the child had slept, the next day finds it well enough not to need the physician, in the family's estimation. Then the diagnosis of aphthous stomatitis is made; and had the description which the majority of the text books give been relied on entirely, no doubt grievous effects might have resulted from a too optimistic diagnosis. The two diseases probably began their work at about the same time, but the more active and benign malady masked the early stages of the grave disease. The swelling at the angles of the jaw aroused suspicion in connection with the running from the nose, more so than did the swollen condition of the tonsils. Barthez and Rilliet 18 had observed that aphthæ may occur on the tonsils, but rarely. Ashby 19 also notes the occurrence of aphthæ and tonsillitis, temperature reaching 103° F. I would here recall the case of aphthæ, tonsillitis, rheumatism, mentioned awhile ago. And, finally, the aphthæ on the lips, tongue, and floor of the mouth healed undisturbed by the nearby diphtheritic processes. I might also state that the diagnosis of diphtheria in this case was confirmed by the bacteriological department of the Board of Health. It has not been an object of this paper to consider bacteriological differences.

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DISPUTED POINTS IN THE SURGERY AND PATHOLOGY OF PELVIC DISEASE.

BY

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It is related of an unfortunate victim of a powder-mill explosion, lucky enough to be blown very high but to alight without general compound, comminuted fracture, that his first words were, "Where am I at?"

This is about the sum and substance of some of the apologistic papers and of the occasional radical emanations on certain subjects that are just now puzzling the minds of the general profession in reference to what ought and what ought not to be done in the cases of pelvic disease coming under their notice.

Prof. Palaver Papaver, the great Oriental authority, astonishes the world by radically curing incurable cases by waiting till they are past operation and letting them die themselves. By this method two objects are accomplished: the diagnosis of ultimate death is confirmed, and Nature has her way. Nature,

to many minds, is the sovereign remedy to be trusted in cases of doubt; by so doing credit is got gratis in the event of recovery, and blame is escaped by philosophic resignation to mysterious methods of "Nature." This is in effect the advocacy of the everlasting rest treatment. The advantages of this peculiar method are so patent as to need no exposition. Prof. Dubioso Dogmaticus classifies his treatment according to the temporal conditions of his patient: Surgery where pay is doubtful, delay [rest] where collections are certain; surgery to the poor who must work, rest to the rich who can pay. This is logical. The benefits are equally distributed. On the one side the patient receives them, on the other the doctor. Professionally we must not be selfish. As to facts, there are enough at the odds to give us an argument for everything we desire to try. This is an argument furnished gratis for my controverters. Prof. Ingenuus Subrisus [lately appointed] treats every case two ways, each case a different way, and is doubtful all the time. This is a combination of the homeopathico-allopathico miscegenation, allied to the propagation of certain defamed and unfortunate creatures to whom ancestry is a reproach, pedigree impossibility.

Prof. Audax Gabulandi represents the radical school of rising surgery, which has for its aim the universe; object, to make extremes meet.

Motto: Either do not operate at all, or if operation is necessary, or, better, decided upon, remove everything. This radical advice is a necessary accompaniment of any uncertainty as to where the exact seat of the disease is located. But if all is removed, within limits, we are sure of attacking and evacuating the offending part with corresponding success; or in ease of failure there will be so much less to seek at the next interview on the operating table.

Gentlemen, you will pardon the apparent levity with which I have introduced a serious subject. Nowhere else ought the signs to read more clearly than in the domain of diseases of the pelvic organs. Several decades have now elapsed during which every phase, every condition, every cause, and every symptom of this many-armed Briarean monster has been discussed, often, I fear, by those little fitted to consider it. Surgery, over our many-stated country, is like its politics and political privileges—democratic. Each man speaks as he will, with none to stop or question his right. The evil of our profession is the too preva-

lent medical journal. These are too often established to give a ready advertising medium to the patent nostrum or the enterprising manufacturer, and must be filled at any cost, at any risk, with anything that takes up space. This gives a ready outlook for all kinds of talent—for the man who wants to write himself into notoriety, and for the lucky dabbler who mistakes coincidences for causes and fluently misleads by his unique experience. As the French say, "All cats are black in the dark," and so all names are alike on paper, and we have often only uncertain means to determine which opinion is founded on fact, which is imagination, which is pure fiction. In my discussion of the subject I have attempted to elucidate, I shall endeavor, as we pass, to mark some of the leading points that indicate steadfast, abiding surgery and theory, in which we may safely put our confidence. First we have the history of doubt and contradiction of conditions ever surgical in the so-called pelvic cellulitis.

The classic volume of Bernutz and Goupil, late to be recognized, tardy to be accepted, threw such a flood of light on this matter that once for all we should have considered the matter settled. Their facts are not the exposition of a mere theory. Their facts proved a condition concerning whose reality it is criminal to theorize. Post-mortem after post-mortem discovered the existence of pelvic lesions, treated after the old-time orthodoxy of poultices and painting with iodine, with a ghastly uniformity in the results. Yet in the face of all this, and of all the evidences lately accrued, we have it gravely stated, by men who ought to know better, that pus in the pelvis or in the tubes is rarely dangerous per se.

On the top of this we have it gravely stated (but, be it remembered, the augurs were wont to smile at the oracles) that even if a tube be broken down by puriform degeneration, it may still be worth preserving as an agent in the production of pregnancy. Mark you, cheesy with pus, it may translate the ovule through puriform deposit and so render impregnation possible. The authors of such nonsense forget, in their zeal to be considered conservative, that such tubes are, by universal consensus of the best and most accurate observers, made responsible for the majority of cases of ectopic gestation, and so, if they are conducive of pregnancy, it is of the most dangerous variety. Then, again, it is easier to suppose that in cases where diagnosis is made of tubal and ovarian abscess, bilateral, followed afterward by

conception and delivery at full term, an error has been made and that the supposed tubal disease was in reality something else. It is often difficult even under the eye and finger to tell what the nature of a diseased part is, and the results in cases claimed as above controvert the diagnosis, no matter by whom made. The argument that tubal and ovarian abscess are not in themselves dangerous is simply special pleading. It has been proven clinically, and on the operating table, and in the post-mortem room that many of the cases of puerperal peritonitis are due to a one-sided ovarian or tubal abscess ruptured during delivery. Now, if this is at all conceded, and it cannot be denied, it establishes once for all that the condition that is not dangerous is most fatal in the very circumstances that these surgical sleightof-hand men claim and urge for its non-removal. What we want to remember, in reading such special pleading and oblique reasoning, is that two diametrically opposite statements cannot be true, and that one of the two must be ill-considered, ill-advised, or untrue, and that whichever is true labels all other previous statements as injudicious expression. At this point we are met with the pseudo-experience of many who would pose as authority on the subject of this class of troubles. Immediately at the beginning of their work they commonly spoke of this or that fact observed for a long time, or this or that expedient practised for a number of years, at a period when their cases were at a minimum and their observation of negative value. These are the men in whom change of opinion is to be expected. At the start they are either radical conservatives or rancorous radicals, and at the end they balance accounts according to their own experiences—usually bad—condemn all that others do, condone their own mischievous results by their honesty in confessing it, and take the ground of irresponsible neutrality where they can shoot either way. With these, conservatism and delay are synonymous. Their counsel is good so far that it may hinder irresponsible and unfit operators from entering where they have no right to go. Their advice is bad, seeing that it will unsettle the minds and convictions of many physicians who otherwise would have their patients, under these conditions, obtain the benefits of surgery.

The argument against the prompt and thorough removal of diseased parts, so readily admitted as to other regions, is again latterly disputed on account of the hidden nature of the disease and on account of the presumed easier alternatives, such as vaginal puncture and drainage. We even have had aspiration suggested in tubal and ovarian abscess by bringing these against the abdominal wall and puncturing, or through the vaginal vault by the same method. This is akin to fixation of the uterus by thrusting a needle through the abdominal parietes, without incision, or such rash surgery as lithotomy and allowing the patient to walk home from the office. When operators, presuming to be careful and conservative, have these and like procedures on the conservative list, what are the grounds for their authority? If I were to say to any one of you, "I would not hesitate to tie the carotid by boldly thrusting the needle through skin, superficial and deep fascia," what would be your verdict? And yet procedures just as rash, ill-advised, and unsurgical are hailed with approbation and considered progresssive. Now, the truth is that at their best such measures are only halfway, weak-kneed attempts at surgery to avoid seeing the dangers of operation and failing in the handling of complications.

The complications of pelvic surgery are its trying elements, and no man of small skill is able to deal with them intelligently or successfully. Puncture and drainage, even in the socalled cellular tissue abscess, is in no wise certain of success, seeing that such abscesses, when they have been found, are said to have been multilocular. Moreover, in ordinary cysts in the external tissues, if the sac is not removed, it is the usual history that they refill. Abscesses vaginally treated have no different history, and in the great majority of cases cannot be thoroughly evacuated, as I can demonstrate to you. I have so often repeated this that I only mention it now on account of some misleading claims lately made as to the cure of these conditions without operation—claims that I do not believe for a moment can be substantiated. Many of the older operators, when first convinced of the value of real surgery in these cases, heralded the innovation as incalculable in its benefits. Where now is the value of their opinion, if they go back to their old practice? Surely they condemned this with a knowledge of its insufficiency, so by what logic do they now proclaim it a placebo equivalent to a cure? Such contrariety of opinion from the same source proclaims the fact, first, that they were dissatisfied as to their results by simple treatment and went over to the new and logical procedure; and now, having failed in this, rather than acknowledge their shortcoming they condemn the

methods which they are too unskilful to apply or too unscientific to determine their useful application within the limitations of surgical principles. It must be remembered that real surgery does not propose necessarily to establish all physiological functions. Amputation will leave a man lame, but it may save his life; so abdominal surgery often stops the progress of disease, while the patient is nevertheless slow in regaining the health often lost more by delay than disease. Upon the top of much of the so-called conservatism comes much ultra endeavor after originality in the shape of unjustifiably extensive operation. No one can condemn any operation within the limits of dangerous disease, but the advocacy of the extirpation of the entire system of related organs for mere suspicion of some discomfort is the acme of rashness. What, then, is the status of pelvic surgery and pathology? First, the actuality of pelvic disease, as represented by the most careful and conscientious surgeons of the day, is substantiated by the post-mortem table and the microscopic pathologist. Its fundamental conditions and effects are of a kin with like conditions elsewhere, the location in the pelvis alone making them peculiar. The range of pathological implication in the pelvis is wide and farreaching in its possibilities for evil. What appendicitis, suppurative and fulminative, is in general surgery, ovarian abscess and tubal pus retention are in gynecology. Pus in the pelvis as an acute condition is recognized as a serious accident. As a chronic condition its results, while slower, are none the less fatal finally. Lung, kidney, and liver implication are natural sequelæ of the disease. The pathological importance of pus in producing disintegrating changes throughout the entire organism is too well understood by you all to render it necessary to insist on it here. As to the original cause of diseased tubes and ovaries, we are prepared to argue and sustain the position that gonorrhea in the male is an important factor.

Dirty midwifery, dirty midwives, abortion with retained placental débris, have much to answer for. "Catching cold" it is fair to put under the mythical causes in most instances, unless coming on the top of antecedent inflammation. So, with such an etiology, it is easy to understand that ovarian and tubal disease is not a myth; nor is it difficult to grasp the fact that if a gonorrheal orchitis will destroy the physiological function of a testicle, it will also past redemption work injury to the Fallo.

pian tube. Gonorrheal conjunctivitis is a terror to every obstetrician, but to a certain select few it is a myth and ogre in gynecology, to be used only occasionally as a great scare. Patchwork reasoning will not do. A pathology for one organ having a like cause as in another must have the same results. But whatever the origin of the disease, when suppuration has gone on the changes are more or less identical and the results must be the same. I will make it plain, if you are in doubt in the discussion, that so-called palliation is often exacerbation of the disease; though to prove this it is not necessary to look further than the latest journals for cases of so-called recovery from pelvic abscess relieved by puncture and the like, only to relapse and finally succumb. If, then, the pathology of these diseases is real and established, ought not their surgical treatment also to be a matter of more or less general consensus from a scientific standpoint? A physiological function with all its data established, as are the points of this pathology, would have but little captious criticism. Unfortunately here we are brought into an argument as to whether the loss of physiological organization carries with it a loss of physiological function. Disregarding all analogical reasoning, the position is strangely held that the tubes in this respect are an exception to all other organs. The question comes, Are we, as rational men, required to believe this? And I take it the answer is no. I reason that if a man does not believe in his own surgery we need not be expected to take for granted a pathology, new indeed, but modified to justify his own scepticism.

The disorganization and destruction of the tubes and ovaries by inflammation and adhesions is really a small part of the socalled pelvic disease. The destruction extends apace and is limited only by varying conditions of the patient.

The implication of bowel, omentum, bladder, and connective tissue often is a matter of the gravest importance and leads often to the most serious consequences.

Intestinal adhesions give rise to a vast amount of pain; indeed, most of the pain of pelvic disease may be said to come from drag and draw of adhesions.

Outside of simple binding down of parts naturally free and unrestricted, the calibre of the gut may be brought down to nil and complete obstruction take place. Hence it is seen that the argument against cure of such cases outside of real surgery is fallacious and misleading, and that in the very worst cases such cure is impossible in the pelvis, just as it is acknowledged to be

so in other regions of the body. For any man to say that his desperate cases recover without operation is for him to confess that his operation has been unjustifiable and his interference one of ignorance.

If, now, there is a real pelvic pathology—and I shall take for granted that no argument is needed to prove this—it stands out that in the pelvis, as in other portions of the body, there is a surgery for suppuration and adhesion, for gangrene and inflammation. This surgery calls for removal of hopelessly diseased parts, or of parts likely to interfere with the physiological function of more important parts. On this line nothing more need be said.

A word in conclusion as to the after-effects of removal of tubes and ovaries. It is a question not to be decided upon the testimony of a single operator, but only by a consensus of men of experience and operators. I believe that these will, on the whole, decide that in surgically ill cases the benefits are real and lasting, rescuing a woman oftentimes from a condition that is only living death. I lay it down that in the worst cases the benefits will be the most apparent, and that oftenest we will be disappointed where we are tempted and dragged into operating where the lesions barely justify such interference. As to insanity produced by operation, I have no hesitation in saying that in many cases it would have come on later at the event of the real climacteric.

All in all, there is a deal of misconception as to the real place of pelvic surgery. But much error will cease when we remember that in this, as in other surgery, common sense must guide us, a real surgical drill and experience, an elimination of pretence, the feeling that anybody may open the abdomen while only a specialist may remove a cataract. Judged by such standards there will be less quibble, better results, and more advance.

POINTS IN THE ETIOLOGY AND TREATMENT OF INFANTILE ECZEMA.¹

ВΥ

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One of our great American physicians was wont to speak of headache as "the opprobrium" of our profession. I have

¹ Read before the Washington Obstetrical and Gynecological Society.

often thought that this distinction belonged more rightfully to eczema.

Headache is often dependent upon causes and conditions which may neither be averted nor remedied. But when we fail, in the long run, to relieve a case of eczema, we can "lay no such flattering unction to our souls." The fault is either our own or that of the individuals or circumstances attending our patient. The disease in itself is remediable, however tedious the process of cure. According to Bulkley "it may be distinctly stated that eczema is a curable disease, though in certain forms it may prove very obstinate." George Henry Fox: "The disease is always amenable to proper treatment, and in no field of medical practice can the physician more readily secure reputation and reward than in its diagnosis and cure." Henry G. Piffard: "It is the most frequent, and frequently one of the most obstinate, of all curable cutaneous affections." Such testimony need not be further multiplied.

But, whatever opportunities this human ill presents for the attainment of professional "reputation and reward," we cannot help agreeing that in point of fact, in actual practice, less credit is gained or success achieved in the treatment of eczema than is the case with any other disease which can be mentioned. And inasmuch as its victims comprise, by statistics, one-third—in the opinion of an authority like Bulkley, one-half—of all the instances of cutaneous disease, inasmuch as it spares neither condition, age, race, nor sex, it well behooves us to consider why we are so unsuccessful in its treatment, and why the laity have so little confidence in our ability to relieve that the newspapers teem with advertisements of charlatans who reap abundant harvests from our failures to cure.

I have not the good fortune to offer you anything new in the consideration of this matter, to vaunt any remarkably successful remedy or course of treatment, least of all to boast of any individual success in my own experience with the abominable bête noir, but only to study with you the causes of our frequent failures, especially in such cases as pertain to pediatrics, and to endeavor to draw useful lessons from a careful consideration of the field.

It is exceedingly difficult to deal concretely with a subject presenting the enormous array of detail which this does, and yet we have only time to trace the merest outlines.

The first pertinent suggestion, I think, is that we are not sufficiently diligent, as a rule, in ascertaining and removing the particular cause which underlies each individual case. course none of us are unaware that eczema occurs only in those who have a predisposition to it, and that no permanent cure can be effected by merely local treatment. But while this is universally acknowledged, it is by no means generally acted upon. A short time since I was consulted by a mother nursing her seventh infant, 3 months old. She distinctly explained that her terrible experience during the previous lactations had wellnigh deprived her of all hope of relief, but if I thought I could do anything for her baby she would make another effort. She mentioned the physicians who had failed to help her, and said that the last (a man, by the way, of distinction as a teacher, a State examiner, and a practitioner) had declared he had done what he could and knew of nothing else to suggest. None of them seemed to have thought of attacking the disease through the mother. I inquired as to her diet, and found that she was omnivorous; asked how often the eruption was bathed, and learned that water was used freely. A little advice as to diet, a course of arsenic to be taken by the mother, and appropriate local treatment (by unguents and not lotions) resulted in such signal relief that I have been embarrassed almost by her expressions of gratitude, transmitted in various ways-for I have seen neither mother nor babe since the visit.

Dr. Piffard explains the irritating action of water as due to "endosmosis producing tumefaction of the cells and pressure on the fine nerve terminations ramifying among them." He thinks that lotions approaching the specific gravity of the blood serum are sufficient. Unguents, however, in practice have served me better than lotions, and must secure exosmose more surely than lotions, even of the specific gravity of the serum. Moreover, there is nothing in the argument of non-cleanliness, for oils are really more detersive than water. A most important point in connection with constitutional treatment, and one to which I do not think our attention is sufficiently directed, is that the remedies most commonly used (notably arsenic) are cutaneous stimulants, and their doses should be graduated inversely as the degree of cutaneous irritation, or, rather, inflammation. I believe that viola tricolor, calcium sulphide, rhus toxicodendron, and num-

berless other agents generally used, are liable to the same rule of exhibition.

Some time since I reported to the Medical and Surgical Society of this city a case of zoster apparently produced by arsenic in a subject not requiring its therapeutic effect.

When the local lesions of eczema exhibit highly inflammatory conditions the most minute doses of these alterative agents are found to have the best effect.

So far as local applications are concerned, there can be no difference of opinion as to the importance of most careful discrimination in the choice of remedies and their mode of application. Where inflammatory action is high they should be protective and soothing; on the other hand, when indolent, most stimulating agents and measures may be employed to alter secretion and promote absorption.

Piffard has observed that the skin of eczematous patients is apt to be dry and harsh, and recommends attention to the whole surface in every case, not limiting therapeutic measures by any

means to the portions attacked.

The sum of the whole matter is, then, that when a little sufferer is brought to us we should undertake the case with a full sense of responsibility, appreciating the fact that, if we have full sway in the treatment, it will be our own fault if a successful result is not reached within a reasonable length of time.

That, as the disease *invariably* depends upon predisposing conditions, it may require both care and patience to ferret these out and abate them, whether they exist in the person of the patient or be acquired from some other source, whether they be due to causes diathetic, dietetic, or hygienic.

Next, to ascertain the sources of topical irritation and remove them, and to apply such remedies, constitutional and local, as may be demanded by the peculiarities of the subject and the degree and extent of the inflammatory processes.

Lastly, to acquaint those who are responsible for the patient's care that relapses are likely and sure to follow any relaxation of attention and diligence on their part.

NEURASTHENIA IN YOUNG WOMEN.1

BY

HENRY B. DEALE, M.D., and S. S. ADAMS, M.D., Washington, D. C.

The topic we have selected for discussion this evening is one well worthy the consideration of the members of such a society. Not that it may be considered a disease belonging only to the gynecologist, but because cases of this nature are so frequently wrongly referred to the specialist for his care.

Neurasthenia, in the vast majority of instances, is a disease that belongs to the general practitioner; though, due to a very prevalent belief that nervous troubles occurring in young women depend generally upon some derangement of the organs of generation, the other causes being obscure, all symptoms are referred to the uterus and ovaries and she is sent to a gynecologist.

The disease as now recognized and named is a comparatively new one, Beard in 1868 first having formulated a train of symptoms and grouped them under the name of neurasthenia. He considered it distinctly a disease of this country, hence it was also called the American disease, though this idea is scarcely upheld by subsequent experience. The most comprehensive definition of neurasthenia is that advanced by Bouveret, who defines it as a "disease of the nervous system, without organic lesion, which may attack any or all parts of the system, and characterized by enfeeblement of the nervous force, which may have all degrees of severity, from slight loosening of these forces down to profound and general prostration." The line of demarcation in this disease between hysteria on the one hand and melancholia on the other is indeed a fine one. Some consider both as phases of it, though this is hardly probable. Neurasthenia may occur in both sexes and at all ages, but we have restricted ourselves to a consideration of the disease as it is manifested in young women.

Many theories as to the causes of this condition have been

¹ Read before the Washington Obstetrical and Gynecological Society.

advanced. A reflex cause, due to some derangement of some nonnervous organ, may probably produce a condition that simulates, at least to a great degree, neurasthenia, and which, under proper attention to this derangement of the organ or organs, may be entirely relieved. Whether this is neurasthenia, or merely a nervous state due to an exciting cause and depending on it, is certainly an open question, though I do not consider it a pure and simple neurasthenia. Another cause of this condition is one whose recognition we owe to the physiological chemist namely, malnutrition and malexcretion, a comparatively new phase in medical etiology, but one full of interest and fascination. Aitkin says "that the healthy living organism may become poisoned, gradually and more or less slowly, by the accumulation within itself of deleterious substances normally elaborated." This is now universally recognized as possible, and this accumulation may exert nearly its entire virulence upon the nerve cells and thereby cause a neurasthenic condition. That heredity is a ruling factor in the causation of this condition cannot be doubted. Not that we inherit the condition itself, but we receive as a legacy a weakened nervous force, with less resistance and buoyancy than mark a normal state. It is, as in all physical inheritances, merely a tendency, sufficient probably for an ordinarily varied existence, but incapable of great excitement or an unvaried, humdrum life. This weakened nervous tendency inherited by a young girl or woman harassed by the ambitions of school life or social excitements, or annoyed with household and family cares (probably a dull monotony at best), all occurring early in a time of life when the entire organism, nervous as well as physical, is undergoing a great strain-all this seems sufficient to account for the nervous depression or exhaustion that so frequently results. May we not frequently attribute this neurasthenic condition to these simple every-day experiences rather than seek for some vague reflex or obscure chemical cause? Certainly these first should be investigated, trivial as they may seem.

The symptomatology of neurasthenia is as varied as its occurrence. No set of symptoms can be given as universal, the only positive feature being an utter collapse of the nervous as well as the physical energy, to that degree that one is incapacitated for all forms of mental and physical exertion. This may be accompanied with sleeplessness, excitation of one or all the special senses, constipation, and probably atonic dyspepsia. Each case is a law unto itself, and each presents its own characteristic symptoms, some more, some less.

This brief and very imperfect introduction to the discussion of this most important and at the same time obscure condition is presented with the hope that something new may be elicited from the observation of some of our members whose personal experience has afforded greater opportunities for its study.

Diagnosis.—It is of the greatest importance to differentiate neurasthenia from the functional and organic diseases of the brain and spinal cord. This at first might seem to be an easy task; but when we consider that very many of the prominent symptoms of neurasthenia are also common to many of the principal organic changes in the brain and cord, it becomes more difficult. The diagnosis cannot be made from any one symptom, but from the history of the case, the etiological factors, and the group of phenomena common to the neuroses which it simulates.

The object of this paper is to confine the subject to unmarried women under 25 years of age, and to exclude all cases which require surgical interference. As the period from puberty to the twenty-fifth year, with its anatomical and physiological transformations and evolutions, is the time of greatest fertility and fecundity, so is it also the period of hyperexcitability in the function of the nervous organization of young women. The importance of a correct diagnosis is still further demanded to prevent unnecessary examinations and manipulations, to transform a mental sufferer into a hopeful invalid, or to guard against self-injury by reassurances of a certain, if not a speedy, cure. The symptoms of neurasthenia are changeable in character, location, and intensity, and are continually recurring without any apparent provocation. They are seldom found in those diseases characterized by definite pathological alterations, but are the result of imagination, as formication, blushing, hot and cold flushes, nausea, vomiting after eating certain foods, hyperesthesia of the scalp, headache, irregularity and intermittence of the pulse without cardiac lesion, insomnia, restlessness, aversion to certain persons and things, fear of bodily harm, an uncontrollable desire for stimulants and narcotics, and the constant dread of becoming a hopeless invalid, perhaps to be consigned to a hospital or an insane asylum.

In organic disease of the brain and cord the reflexes are decreased, while in neurasthenia they are augmented. Neurasthenia never affects the sanguineous, but the nervous temperament, which is characterized by "vivacity of sensation, prompted by fickleness of determination, small, soft, and wasted muscles, and generally a slender form. Created by sedentary, studious, or fashionable life and the appliances which attend it, it is intensified as the case continues, and results sometimes in well-marked diseases" (Yandell).

The neurasthenic must not be confounded with the true hypochondriac. In the former there is disease, in the latter only the fear of it. In the neurasthenic there is usually evidence of a nerve impoverishment, while the hypochondriac appears healthy and robust. The hypochondriac becomes hopeless over that which does not exist, while the neurasthenic loses hope as the nerve forces diminish.

Hysteria has been frequently mistaken for neurasthenia, and a few writers make no distinction between them. Hysteria is more paroxysmal, and is found in those of emotional and excitable nature whose physical condition is perfect but whose intellect is warped; neurasthenia engenders physical impairment combined with a bright but weakened intelligence. Hysteria may terminate suddenly, while neurasthenia and its accompanying disorders of functions are the result of reflex irritation from impoverished nerve elements. As many and varied symptoms may result from neurasthenia, the general practitioner should be careful not to mistake effect for cause, thereby transferring the responsibility to the alienist.

Prognosis.—The prognosis, though usually good, depends upon each individual cause. It is true that symptoms may be successfully met and conquered as they arise, without alleviating or eradicating the principal cause. If the prime etiological factor can be isolated and removed the cure will be speedy, otherwise the course of the disease will be protracted.

Neglected or improperly managed neurasthenia may result in some permanent functional or organic disease of the nervous system. Such cases have been known to terminate in insanity, hysteria, special or general neuralgia, inebriety in one of its many forms, and in diseases of the reproductive organs.

Treatment.—The treatment, to be successful, must be directed to the improvement of the general health, with sufficient atten-

tion to any prominent local manifestation which may arise. Each case must be studied as an entity and all treatment directed to it. There are various methods of general and local treatment, and perhaps all may be tried in a single case without avail. A change is sometimes beneficial, so we must not cling too tenaciously to any one method.

The personal hygiene and habits of the neurasthenic should receive due consideration. She should be required to bathe sufficiently often to stimulate the skin to renewed activity, and a sufficient amount of exercise in the open air should be prescribed as a daily routine. She should be required to take a certain amount of rest, both of mind and body, during the day, but should not be encouraged into lazy or indolent habits. While she should be permitted to have a certain amount of entertaining company, she should be required at times to isolate herself. As the neurasthenic usually possesses an active, working brain, she should be required to abstain from all undue mental excitement.

The digestion should be carefully watched, and articles of food easy of digestion and assimilation should be prescribed. It may be necessary to place her upon a milk diet, in which case suitable quantities at short intervals should be given. Should the stomach refuse to retain food, rectal alimentation will become necessary. In such cases it is better to nourish the patient through the rectum until the irritability of the stomach is allayed and the desire for food returns. As the neurasthenic frequently suffers from insomnia, means should be taken to encourage sleep without the administration of soporifics. This may be done by prescribing a regular hour for retiring, and compelling the patient to avoid exciting conversations or reading just prior to bedtime. Travelling in distant countries may prove beneficial, and it is often desirable to have such patients spend a portion of their vacations in camp life or roughing it, where they may be free from sympathizing friends and indulgent parents. Riding, sometimes on horseback, is always beneficial, but it must be done in the country where they will obtain fresh air and plenty of it. Often a change of climate may prove beneficial, but it is questionable whether the change of scene and removal from exciting causes may not be quite as beneficial as the change of meteorological conditions.

The dress of the neurasthenic should be comfortable, suited to

the season, well fitting, and, if possible, hung from the shoulders so as to avoid pressure upon the thoracic and abdominal viscera.

Medicinal agents employed in the treatment of neurasthenia are numerous, but almost all the methods of treatment are directed to the improvement of the general health and the nervous system.

It may be necessary occasionally to administer an anodyne to relieve pain, or a stimulant to whip up the flagging heart; but even here great judgment should be exercised to avoid transforming the unhappy neurasthenic into a hopeless inebriate. Arsenic, cannabis indica, caffeine, cocoa, zinc, the bromides, chloral, strychnia, opium, alcohol, the mineral acids, and the phosphates have all been tried and have as often been found wanting.

The external methods of treatment may often prove valuable. Electricity and massage have of late years been awarded much praise in the treatment of such cases. When applied it should be under the direction of the physician, who should prescribe the current and part to be treated and the length of the séance. So should he also govern the application of massage.

Some cases are benefited by one of the many spray baths. Hydrotherapeutics must also be directed by the physician himself. A beneficial effect is sometimes derived by the application of small blisters or the mild cautery along the spinal region.

Finally, if we wish to benefit this unsatisfactory class of cases we must assume complete control over the patient, write out clearly and succinctly the rules governing her daily life, and insist upon their enforcement. Even with the exercise of such precautionary measures a certain number will ultimately fall into the hands of the unscrupulous charlatan.

PYOMETRA.1

BY

G. WILLIAM REYNOLDS, M.D., Gynecologist to St. Joseph's Hospital, Chicago.

Prometra is a condition which has received very scant attention at the hands of gynecological authors in this country and abroad. Among our standard American authors the disease is

¹ Thesis read before the Chicago Gynecological Society, December 22d, 1893.

not even mentioned. The case which I am about to report is the only one of its kind that I have observed during a service of thirteen years as gynecologist to St. Joseph's Hospital, during which time I have had abundant opportunities to observe gynecological cases, and have had the privilege of seeing the greater portion of the work of the late Drs. Gunn and Parkes, and of Dr. Nicholas Senn. This fact alone, aside from the paucity of gynecological literature upon the subject, has impressed me with the great rarity of pyometra. I have been unable to find a parallel case in the literature at my command.

The history of the case is as follows:

Mrs. J., aged 53, Irish, married, was admitted to St. Joseph's Hospital September 23d, 1893, having been referred to the institution by Dr. C. D. Bradley, of this city. The patient has had ten children, the youngest being 14 years of age. The menopause occurred in August, 1892. In April last she complained of a bearing-down sensation in the pelvis. Her general health was good, and she was able to do her housework as usual. In June she first noticed an enlargement of the lower abdomen. Two months later the bearing-down sensation had increased and was accompanied by distress in the vagina and rectum, and great vesical irritability. She found relief from her discomfort only when lying down. There was a sense of malaise, attended with slight chills, and more or less pain in the hypogastrium. At this time she sent for her family physician, Dr. Bradley, who advised her to go to St. Joseph's Hospital and consult Dr. Senn.

On entering the hospital the patient's temperature was 98°, pulse 80 and normal. She was examined by several physicians, two of whom made the diagnosis of uterine fibroid. Through the courtesy of Dr. Senn I was invited to examine the case. A median abdominal tumor was found, which occupied the lower portion of the abdomen and extended as high as the umbilicus. On digital examination the lower segment of the tumor was felt apparently about three inches from the vaginal outlet, and imparted to the finger the impression of an edematous fibroid. The os and cervix could not be made out; on passing the finger upward I felt what I supposed to be a dilated os, but on further examination it proved to be the broad ligament which had been dragged down by the prolapsed uterus. The upper portion of the vaginal canal was filled completely, and the finger could be passed only with great difficulty between the tumor and the

vaginal wall. There was at this time so much pressure upon the rectum as to cause considerable obstruction to the passage of feces. The bladder was also extremely irritable.

The interest in the case necessarily centred in the diagnosis. The physical signs revealed an abdominal tumor, which had been variously diagnosed, by men eminent in the profession, as fibroid of the uterus, fibrocystic tumor of the anterior uterine wall, and hematometra. The two latter diagnoses were made after the examining physicians had been informed that the disease was one of greatrarity. I considered the case one of uterine fibroid, and, considering the history and physical signs, together with the meagreness of the literature upon the subject, I am not surprised at my error in diagnosis, nor at the variety of diagnoses made by others. The credit of the correct diagnosis is due to Dr. Senn, who, upon digital examination, discovered obscure fluctuation, and suspected, from the age of the patient and the history of the case, that there might be pus in the uterus. This suspicion was based largely upon the fact that no trace of cervix or the cervical canal could be found. The patient was placed in the dorsal position and a large Sims speculum introduced, but no cervix could be seen or found by the finger. Dr. Senn proved the correctness of his diagnosis by finding an abundance of pus upon vaginal puncture of the uterus, with a small sterilized trocar, at a point corresponding with the obliterated cervix.

On the following day an anesthetic was administered, and the uterus was incised by means of the thermo-cautery as nearly as possible in the normal situation of the cervix. The thermocautery was used to avoid serious hemorrhage and because it would leave the opening less liable to close permanently by cicatricial contraction. More than a quart of pus escaped. After thorough irrigation with saturated boric-acid solution, a half-inch fenestrated drainage tube, about six inches in length, was passed into the uterine cavity, which was about ten inches in depth. Iodoform was used freely, the vagina packed with iodoform gauze, and the usual external antiseptic dressings applied. The dressings were changed daily and the uterine cavity irrigated with an antiseptic solution. As the uterus contracted the drainage tube was shortened. On my last examination of the patient the uterus measured two and a half inches in depth, and although there had at this time ceased to be any discharge, a half-inch drainage tube of the length of the normal cervical canal was allowed to remain, to permit the epithelium during the process of cicatrization to extend throughout the quisi-artificial cervical canal, with a view to providing, as far as possible, a structure which would practically subserve the function of the normal mucous membrane. She left the hospital perfectly well three weeks after the operation.

It is probable that this pathological condition began at or about the time of the last confinement, at which time occurred a prolapse of the uterus and laceration of the cervix, with ectropion, followed by ulceration, cicatrization, and closure of the cervical canal. The uterus was undoubtedly in a condition of suppurative endometritis at the time the atresia developed. After the uterus had regained its normal dimensions it was proven that the cautery penetrated the anterior lip between the cicatrix marking the position of the original cervix and the healthy tissue. This certainly must have aided in keeping the opening patulous.

After thorough and exhaustive study of the literature at my command I have not been able to find a case identical with, or even strongly resembling, this one. The only case which at all resembled the one under consideration was reported by Bakowski as a rare case of abscess of the uterus. It occurred in a woman, 65 years of age, who had had a single labor at the age of 22, followed by a vaginal prolapse which had never been cured. At the age of 40 there was an obscure history of an abortion, and some pelvic trouble developed at the age of 45. The patient's abdomen became distended and tender, and the swelling extended two fingers' breadth above the symphysis and could be plainly felt by the fingers. The cervix was atrophied and the os impervious; Bakowski was able, however, to find, and to force a sound through, the cervical canal. A considerable mass, which was found to be the prolapsed vaginal wall, protruded from the vulva, and this could not be reduced. The hypogastric swelling corresponded with the normal location of the uterus. Rest and poultices gave temporary relief. At the end of three weeks a fetid discharge, containing shreds of stinking material, occurred from the uterus, and a fecal fistula

¹ "Uterusabscess mit Perforation in den Cervix; Heilung." Der Frauenarzt, vii., 1892, Heft 3. Translated in the Annual of the Universal Medical Sciences, 1892.

was suspected. Two weeks later the tumor had increased in size; the os was still impervious. A sound was forced through the tissues and entered a cavity six and a half inches long. This was followed by an escape of fetid pus mixed with pieces of uterine tissue. Under antiseptic treatment she recovered in a fortnight. The cause was supposed to be the introduction of germs through cotton tampons which the patient had herself placed in the vagina, her fingers being foul from her occupation—that of dressing rawhides.

My apology for presenting so brief a thesis is simply that I was impressed with the belief that a case of such rare interest would be more acceptable to the Society than a lengthy compilation of gynecological literature upon some more commonplace and less practical subject. Such cases are certainly rare and present undoubted difficulties of diagnosis. The possibility of a serious mistake in diagnosis, followed by a laparatomy for the purpose of removal of an abdominal or uterine neoplasm, is certainly worthy of consideration. There are also certain interesting etiological and pathological features which command attention. The value of exploratory vaginal puncture for the purpose of clearing up the diagnosis at once suggests itself. In case a neoplasm exist no harm would follow such a procedure.

315 Webster avenue.

POLIOMYELITIS ANTERIOR ACUTA INFANTILIS.

ITS ETIOLOGY AND TREATMENT. A CLINICAL STUDY OF SEVENTY-FIVE CASES. 1

ву

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The Result of Treatment, Prognosis in regard to.—
"What has not recovered in the first weeks or months usually remains paralyzed for the whole of life. Still, treatment should be persevered in, at least in the first years, since sometimes a very noticeable improvement in the functions of the paralyzed parts can thus be procured" (Strümpell).

¹ Concluded from p. 83, January number.

"One general fact is unfortunately true of almost all cases—namely, that the palsy scarcely ever passes away entirely, and that where wasting occurs, wasting remains." "At the end of six months all possible recovery is nearly completed, and certainly at the end of a year the lesion has become a cicatrix, and further improvement will be merely by the slow growth of the muscle that has recovered by the stimulus of use, and it occurs equally well without treatment." ¹

The following 75 cases will serve to show the result of treatment begun at varying periods after the attack; also of treatment regularly carried out at these periods, of treatment spasmodically carried out, and of still other cases which were under observation but were not treated at all.

These have been divided into five classes:

Class	1.	Cases seen during the attack or within 1 month after 9
6.6	2.	Cases seen between 1 and 12 months after the attack16
4.6	3.	Cases seen at varying periods after the attack, and under
		treatment from 1 to 5 months 9
6.6	4.	Cases under treatment from 6 to 11 months
4.4	5.	Cases under treatment for 1 year or more21
66	6.	Other cases not treated 8
Tot	al.	

LENGTH OF TIME AFTER ATTACK WHEN FIRST SEEN.

Duri	ing atta	ack	3	3 v	ears	after	
	_		6	31	6.6	6.6	
2 months "					66	6.6	
3	46	44		41	66	66	
4	"	66	1	5	"	46	
5	6.6	6.6		В		6.6	
6	66		3	64	"	6.6	
7	6.6	64	1	7	"	4.6	
8	"	6.6	2	71	66	66	2
9	66	64		8	66	46	
10	44	66	1	81	6+	6.6	2
1 y	ear	"	1	9	6.6	44	
- 5				11	4.6	6.6	
To	otal see	n w	vithin 1 year after the	111	6.6	66	
	attack.		26	12	6 6	6.6	
1 to 1½ years after							_
2 years after					otal.		
27	66 6	6					

Average age after attack when first seen, 2 years, 10½ months; or nearly 3 years had elapsed after the attack at the time when the patient was first presented for treatment.

¹ Gowers, edition 1892, pp. 358, 378.

LENGTH OF TIME TREATED.

			Av. No.	Av. No	D.
			visits.	visits	S.
Not treate	ed	12	_	Treated 1 year 9 6	3
Treated 1	month	1 4	6	" 14 months 2 6	2
" 2	month	is 4	9	" 15 " 2 12	8
" 3	6.6	7	, 18	" 18 " 2 10	8
" 4	"	2	25	" 22 " 1 24	2
" 5	6.6	4	20	" 23 " 2 13	4
" 6	4.6	2	26	" 2 years., 1 6	4
" 7	6.6	3	53	'' 2½ '' 1 27	3
" 8	6.6	2	26	" 32 months 1 21	3
" 9	6.6	2	81	" 3 years 4 21	3
" 10	6.6	2	52	_	
" 11	**	6	53	Total	

Average length of time of treatment in 63 cases, $11\frac{1}{3}$ months. Average number of visits, $29\frac{2}{3}$.

Class I. Summary of the Result of Treatment.—Three of these cases were seen during the attack, and 6 within one month after. One was treated during the attack only, 3 were not treated at all, and 3 were lost sight of. Of the 6 cases which remained under observation for four months or more, 2 cases whose histories are given at length, and which were under observation for one year or more, but which were not treated, grew markedly worse with rapidly increasing atrophy and deformity. There was improvement in all the 4 remaining cases. In the case which was under treatment for seven months the improvement was so rapid as to promise a complete cure, and in the case under treatment for twenty-one months—under my own care for seventeen months—the cure was complete functionally, the only loss sustained by the leg being a slight diminution of faradic irritability and slight atrophy of the calf.

The histories of the following five cases seemed interesting enough to warrant giving them in detail, and are as follows:

Case I.—Under treatment for 7 months; averaged 3 visits weekly to dispensary. The history of the attack has already been given under the etiology. Patient æt. 2 years. Cause, psychical. Onset of paralysis gradual, beginning on the second day. Subnormal temperature on the seventh day. The initial paralysis was confined to the left lower extremity and involved all the groups below the knee and the quadriceps. At this time, one month after the attack, the groups most affected are the anterior tibial, peroneal, and quadriceps. The child is

just making the first voluntary effort to walk. The weight is put on the right leg, and the left thrown forward with a sickle swing, walking on the outer border of the foot and dragging the toes. The leg and foot are cold and the muscles flabby. Dorsal flexion, quadriceps power, and patellar reflex are all wholly lost. Shortening of three-eighths of an inch of the left side. Faradic irritability wholly lost, and galvanic greatly diminished, in the affected limb.

Gait after two months' treatment: Puts heel down first and walks on the inner instead of the outer border of the foot. After five months' treatment: Dorsal flexion good; quadriceps power returning—can now extend leg on thigh; plantar reflex normal, patellar diminished; maximum of right calf, 8,2 inches —gain 1 inch; maximum of left calf, $7\frac{5}{16}$ inches—gain $\frac{5}{16}$ inch; three months, minimum of right thigh, $8\frac{10}{16}$ inches—gain $\frac{3}{8}$ inch; minimum of left thigh, $S_{\frac{6}{1.6}}$ inches—gain $\frac{3}{8}$ inch; i.e., the left thigh above the knee is now one-quarter of an inch smaller than the right, but the gain in the past three months, three-eighths of an inch, has been the same for both thighs, while in five months the gain in the left calf has been five-sixteenths of an inch. To the hand the temperature of the two legs seemed the same. The surface thermometers showed a slight lowering of temperature on the affected side. Axillary temperature 99.2°, pulse 102, respiration 25; right anterior tibial 84.8°, left anterior tibial 83°; right quadriceps 94.5°, left quadriceps 93°.

Electrical Reactions.—Faradism: Faradic irritability wholly lost in all muscles of affected limb. Galvanism: Galvanic irritability greatly reduced; ten milampères give very sluggish contraction in affected groups—viz., anterior tibial, peroneal, and quadriceps. Treatment, galvanism.

February 25th, 1891, seven months after treatment was begun: There is at this time very slight diminution in the faradic irritability; galvanic, normal. Treatment, faradism. The muscles have lost their flabbiness; the tone is good and firm; voluntary motions normal. The child runs around all the time with her brace on, and walks well without it. As a result of seven months' treatment, a return of all the voluntary movements, but still a weakness which prevents sustained effort, and a diminution of the faradic irritability. No note of the girth was taken after the fifth month, when the left calf was five-eighths and the thigh two-eighths of an inch smaller than the

corresponding measurements of the sound side. Last visit to the dispensary was March 5th.

Case II .- Twenty-one months under treatment. Average of 23 visits weekly. Patient æt. 26 months. Initial paralysis, right lower extremity. Although treatment was begun at the dispensary one month after the onset, and the patient came regularly twice a week for three months, when I first saw him, four months after onset, he walked awkwardly on the outer border of the foot and dragged the toes. The paralysis was most marked in the anterior tibial group. There was an atrophy of the right calf of three-quarters of an inch. The girth of the thighs was equal and there was no shortening. The color of the skin was good and the leg not cold. Faradic irritability very greatly diminished. Treatment, galvanism. Five months later—i.e., nine months after the onset—the child walks on the inner instead of the outer border of the foot. One year after attack the muscles are much firmer; gain in right calf, onequarter of an inch; thighs equal; marked increase of the faradic irritability, and this current produces good contractions, although they are much more sluggish and weaker than on the sound side. Treatment, faradism. Fifteen months after attack child continues to walk on the inner border of the foot and drags the toes slightly. Gain of right calf in past three months, one-quarter of an inch. Right patellar reflex diminished. The surface temperatures were taken at this time, and were: Dorsum of right foot 85.5°, dorsum of left foot 90°; right peroneal 2 inches below knee \$4.5°, left peroneal 2 inches below knee \$6.2; axillary temperature, 99.3°; pulse, 100.

July, 1891, twenty-one months after attack: All movements of right side are normal. The child walks perfectly well and runs around all the time, so that the mother has been allowing him to go without his brace for some weeks. The girth of the thighs and length of the two sides have remained equal. The only difference between the two sides is slightly smaller girth of right calf and slight diminution of faradic irritability—i.e., the contractions on the right side are quick and strong, but it takes a slightly stronger current to produce them than on the sound side. Mother was told to allow child to go without brace for one month and again report at hospital, which she failed to do.

Case III.—Under treatment 15 months; 70 visits; average,

once weekly. Patient æt. 13 months; oldest child; instrumental labor; was large, healthy baby; has had no diseases of childhood; began to stand and walk at 11 months. Attack came on while first lower incisor was coming through. In hot September weather child was feverish one afternoon, but slept well that night. The next morning when his mother lifted him out of bed he fell over on the left side. Could not stand or creep; back seemed too weak to sit up; had no pain.

One week after attack, rectal temperature 99.5°, pulse 112, respiration 32. The child cannot stand up or creep. Paralysis is confined to left lower extremity. Dorsal flexion is lost; has no quadriceps power; plantar and patellar reflex both lost. Groups most affected, anterior tibial, peroneal, and quadriceps. Faradic irritability greatly diminished in tibial, peroneal, and calf muscles, and lost in all other groups. Galvanism: The resistance is equal on the two sides; on the left side the contractions of all groups are good, though rather tetanic in character. Treatment, galvanism.

January, 1892, three months after attack and two months after treatment, child made first effort to walk alone, when he took from six to eight tottering steps. The foot is now in a position of calcaneus and he walks on the inner border of the foot. The current was now applied to the calf and tibialis posticus. Maximum of right calf, 7 inches—gain of ½ inch; maximum of left calf, 6½ inches—no gain; minimum of right and left thighs equal gain of ½ inch.

June, 1892: With the eruption of the upper canine teeth during the sudden hot weather in the latter half of June the child became very ill and refused to take any nourishment; the pharynx was slightly inflamed, with great enlargement of the submaxillary glands. The child—now 21 months—was pale and thin, and lay like a young infant. The evening temperature for four days ranged from 103°-103.8°, morning temperature 101.6°-100.4°. Since the temperature was not affected by the usual remedies and the child was failing rapidly, I decided as the final resort to have him taken to the seashore. We started for Rockaway Park at 2 p.m., the hottest part of the day, and were delayed some two hours at the station. When out from the city perhaps half an hour the child fell asleep and did not wake till we arrived at our destination, when he at once asked for a glass of milk. That evening the temperature was still 103°,

pulse 140, respiration 48. The following morning the temperature was 100.4°, pulse 120, respiration 32. The child had slept well all night, only awaking once, when he asked for a drink of milk. The temperature at 3 p.m. of the same day—i.e., after the child had been at the seashore twenty-four hours—was 99.6°. Three days later the child was brought into the city (the St. George's Cottage always being closed from Friday evening to Monday morning for cleaning and ventilation). The evening temperature was still normal. The patient was greatly bronzed, the face full, and he looked like an entirely different child. That afternoon he was running around. Four days before, when he was taken down, he lay helpless as an infant in his mother's arms, and urination and defecation were involuntary. The change seemed almost incredible. On Sunday evening, after two days in the city, the temperature had gone up to 100.2°, the appetite was not nearly so good, and the child did not rest so well. He was again sent to the seashore for another week, and made a good and rapid recovery. good and rapid recovery.

good and rapid recovery.

Fifteen months after the onset: During the past seven months the patient has made eleven visits. There has been during the past year an actual decrease in the girth of the affected calf of one-sixteenth of an inch, and a gain of one-eighth of an inch of the thigh, which now, however, instead of being equal to, is three-quarters of an inch smaller than the sound thigh. There is no shortening. Foot is in position of calcaneo-valgus. There is partial quadriceps power, with diminution of patellar reflex; plantar normal; eczema of left leg. Faradic excitability is diminished in the quadriceps, lost in the calf muscles, and very slight in the other groups below the knee. There is diminished galvanic irritability, with the reaction of degeneration.

Case IV.—Under observation 17 months. Treatment began one year later: 22 visits in five months. Patient æt. 3 years.

one year later; 22 visits in five months. Patient æt. 3 years. Initial paralysis, both lower extremities. One month after onset can only stand by being held under the arms. The weight rests on the left leg. The left knee is held flexed and the right hyperextended. She can extend the left leg on the thigh, but it falls at once. On right side dorsal flexion and quadriceps power are wholly lost. The girth of the thighs is equal; atrophy of the right calf of one-quarter of an inch. Faradic irritability shows greatest diminution in the quadriceps and anterior tibial groups, but no difference between the two sides.

Ten months later, or eleven months after the attack, the patient was next seen. The mother had been using the battery at home by the advice of the family physician. Patient is just beginning to walk; sickle swing of right leg. Maximum of right calf, $6\frac{1}{4}$ inches—loss of $\frac{1}{2}$ inch; maximum of left calf, $7\frac{1}{2}$ inches—gain of $\frac{1}{2}$ inch; right thigh at $5\frac{1}{2}$ inches, $10\frac{5}{8}$ inches; left thigh at $5\frac{1}{2}$ inches, $11\frac{5}{8}$ inches. Ten months ago the thighs were of equal size. There is now shortening of one-half inch on the right side. Faradic irritability is diminished on the left side, but got good contractions of all the groups; still more diminished in right gluteal and quadriceps, and lost in all groups below the knee. Galvanic irritability: Left normal; right greatly diminished, most marked in the anterior tibial and peroneal, with reaction of degeneration.

Sixteen months after the attack: Atrophy is slightly increased, except in the left calf, which measures just the same as five months ago. Loss of one-quarter of an inch in right calf and of one-eighth of an inch in the thighs. There is marked lordosis in the lumbar region. The reflexes are lost on the right side and normal on the left. Quadriceps power good on the left side, partial on right; left dorsal flexion is accompanied by adduction. Quadriceps power and dorsal flexion both lost on right side. Faradic irritability is better in all groups except below the right knee, where it is still wholly lost. Galvanic irritability is good on the left side and in right thigh muscles, but is greatly diminished in all groups below right knee, with the reaction of degeneration.

Case V.—Under observation 14 months; 10 visits. Cause not known. Attack occurred September 15th during very hot weather. There was an initial paralysis of the trunk, both lower and the left upper extremity. The highest temperature was 102° F. on the second day. Opisthotonos, intense hyperesthesia, and "the kidneys inactive and the bowels sluggish"—I quote from the note of the attending physician.

History.—Normal labor; child weighed ten and one-half pounds at birth; varicella at 6 months; no other diseases of childhood; always very constipated; first teeth at 4 months; has always been subject to bronchitis; mother highly hysterical. Before attack pulled himself up by chair; could never walk.

One month after attack, status presens: Marked hyperes-

thesia; child cries if his mother puts him on his feet. Paralysis now limited to the lower extremities and erector spinæ muscles. Reflexes: Patellar and plantar present on the right side, lost on the left. Electrical reactions: Faradic irritability very greatly diminished on the right side, lost on the left. Galvanic irritability diminished, with reaction of degeneration; no difference between the two sides. October, 1891, made three visits.

In May, 1892, eight months after attack, patient was next seen. He can now stand alone by chair—i.e., with the body lying across the seat of chair. Creeps well. Twitches and jerks all the time, as if he might have convulsions. At 20 months is still nursing; ordered to be weaned at once. The mother is highly hysterical. Maximum of right calf, $6\frac{1}{2}$ inches; maximum of left calf, 6 inches; right thigh at 5 inches, $8\frac{1}{4}$ inches; left thigh at 5 inches, $7\frac{3}{4}$ inches.

Ninth month after attack child walks around chair or when both hands are held. Fifteen months after attack, when patient was next seen, I learned that three months before it had an attack of convulsions which lasted three-quarters of an hour—the only time he has ever had them. Has coryza, laryngitis, or bronchitis all the time; is very hoarse now. He is extremely anemic, and blue about the mouth; altogether a very sick-looking child. His efforts at walking are no better than six months ago. The measurements of the calf are the same. There is a gain of one inch in the thighs. The right side is one-quarter of an inch longer than the left. Electrical reactions: Faradic irritability is on the right side greatly diminished, especially in the peroneal and anterior tibial groups, and on the left side is wholly lost except in the gluteal muscles, where it is slight. Galvanic irritability is diminished on both sides, most marked on the left, with reaction of degeneration in both anterior tibial groups and left peroneal.

Result of Treatment begun One Month after the Attack.—Cases 1, 2, and 3 are in many respects identical. In all the mode of onset was not severe, the initial paralysis was limited to the lower extremity, and, while all the groups below the knee and the quadriceps were involved, the paralysis was at the beginning of treatment most marked in the anterior tibial, peroneal, and quadriceps. Dorsal flexion, quadriceps power, and patellar reflex were wholly lost. Faradic irritability was lost or just per-

ceptible, and galvanic very greatly diminished in the affected

groups.

Case 1 made the first effort to stand and walk one month after the attack. Of Case 2 no note is made, but at four months "he had been walking for some time." Case 3 made no effort to stand or walk for three months. He was the youngest, 13 months, at the time of the onset, but had walked before the attack.

Gait.—Cases 1 and 3, after two months' treatment, from dragging the toes and walking on the outer border of the foot, the heel was put down first and the child walked on the inner border of the foot. No. 1 continued to do this until she walked with the foot in the normal position, and No. 3 continues to walk so. This would show the effect of the electrical stimulation of the muscles; the current was, so soon as this observation was made, changed to the calf muscles and tibialis posticus. No. 2, five months after coming under my care and nine months after the attack, walked on the inner instead of the outer border of the foot, but continued to drag the toes.

Case 1: After seven months' treatment the movements were all normal. The child runs around all the time with her brace, and walks well without it. There was a slight diminution of the girth, lowered faradic irritability, and the muscles were less strong than the corresponding groups of the healthy side. But the return of the voluntary movements, of the reflexes and the faradic excitability, leaves no reason to doubt but that for the intercurrent attack of pertussis which ushered in the fatal attack of tubercular meningitis, recovery would have been complete.

Case 2: Practical cure, there being only a very slight lower-

ing of the faradic irritability and girth of the calf.

Case 3 started with precisely the same extent and intensity as Cases 1 and 2, with a good hereditary and personal history, but with the distinct disadvantage that he had still to go through with dentition at this rather late age. That this was a distinct disadvantage his very serious attack shows. Up to this time he had averaged nearly two visits weekly, and the improvement was marked in the leg. The child goes around very well with his brace, very badly without it. There has been marked improvement in only the quadriceps, anterior tibial, and peroneal muscles.

Case 4 had a much more extensive initial paralysis, "paraplegia," with an additional involvement of the gluteal muscles. It was eleven months after the attack before the child began to walk. The general health has been good. This case went one year without treatment, and the next five months paid one visit weekly. At one month after the onset, although the voluntary power was greatest in the left leg, there was as yet no atrophy of the thigh, and degeneration could not yet have begun, since faradic irritability was present and there was no difference in this respect between the two legs, whereas it is now wholly lost below the right knee and these groups are powerless. The child now walks without her brace, with a sickle swing of the entire right leg.

Case 5: The initial paralysis was the most extensive, involving the trunk, both lower and the left upper extremities; the latter had, however, entirely disappeared within the first month after the attack, when we find only a paraplegia plus a paralysis of the erector spinæ muscles. After fourteen months we find both legs practically powerless. The child can sit up alone, but there is not enough strength in the muscles of the back and the gluteals to enable the child to stand up by a chair; as the trunk is thrown across the chair, this argues very little power for the muscles of the legs. The general health is so bad that the prognosis as regards life, as well as to the paralysis itself, is the worst.

In all these cases it is only fair to believe that the faithfulness of carrying out the home treatment may be measured by the regularity of the dispensary visits, since, as in Cases 1 and 2, where the patients are brought from Brooklyn and New Jersey three times weekly, the mothers could be relied on to leave nothing undone.

These results would indicate that treatment begun not more than one month after the attack, and regularly carried out, arrests further destruction of the ganglionic cells and restores the function of others. It may be necessary to continue the treatment from one to two years. The longest time given here was twenty-one months. On the other hand, if not treated, there occurs atrophy and destruction of those ganglionic cells that are now only congested, hence increase of atrophy and loss of function in all groups of muscles seriously affected.

Class II. Summary of the Result of Treatment.—Sixteen cases seen between one and twelve months after the attack. Of

these, 4 were not treated and were lost sight of; 4 were discharged not improved—these patients were under treatment for an average time of three and one-half months; average number of visits, eight; they have all been lost sight of. Three were discharged improved; they had been under treatment for an average time of seven and one-half months, and had averaged thirty-seven and two-thirds visits.

Case I.—Æt. 15 months. First seen five months after the attack. Was under treatment for 8 months, and in this time made 45 visits, or an average of a little more than once a week.

History.—The father is an American, the mother German. Both maternal grandparents died of pneumonia. The patient is the fifth child; labor normal; was a healthy baby; had the first tooth at 6 months, stood by chair at 8, and walked at 9 months.

When 10 months old, in August, he fell from his carriage on the pavement, but did not seem to hurt himself, and there were no symptoms until two weeks later, when in the evening he was suddenly taken with a high fever which lasted five to six days. He screamed out all the time, was restless in his sleep, and opisthotonos continued for from ten to twelve days. The attack was followed by diarrhea and inability to hold up the head. It was five weeks before the child could sit up. Child was nursing, but lost his appetite and refused to nurse. The diarrhea continued from four to six weeks. No teeth since the attack until three weeks ago—i.e., over four months after the attack; in the past three weeks four teeth have been erupted. There were no convulsions. The disease was not recognized by the attending physician; the child was treated for indigestion only.

Status Presens.—It is now five months since the attack. The child cannot stand up, even when supported under the arms; held in this position the heels are together, so that the toes form a straight line with each other—i.e., they are heel to heel, and the toes at a right angle to the body. There is hyperextension of both knees. Most of the weight is supported by the right limb. The muscles are flabby, and while the girth is the same in both lower extremities, the paralysis is most marked on the left. Electrical reactions show loss of faradic irritability on the left and greatly diminished on the right side; also a diminution of galvanic irritability, which is greater on the left than on the right, and there is on both sides the reaction of degeneration.

As regards the general health, the child was well nourished, but very anemic, with deep blue circles under the eyes, and was suffering from a bronchitis. The treatment was irregular, the average being once weekly, but was followed by some improvement. The patient has not been seen since.

Case II.—Patient æt. 3 years. First seen six months after attack. Under treatment for 6 months, in which time the child made 31 visits, an average of little more than once weekly.

Family History.—The parents are German, both living and healthy. Maternal grandfather died at 42 of heart disease. Parents have had eight children; three died of "summer complaint," no convulsions.

Personal History.—Patient fourth child; normal labor; healthy baby; no diseases of childhood; first tooth at 3 months; walked at 11 months.

History of Attack.—The attack came on suddenly, without prodromata, in August; no cause known. The child was then 2½ years old. He seemed well during the day. After supper he began to cry, the head was hot, and the mother was up with him all night. The mother said there was high fever for one day, but had no doctor. The day following the attack the child could not raise himself up from the horizontal position; could not stand up for one month. At the end of the second month he began to walk. There was an initial and permanent paralysis of the right lower extremity; constipation for two weeks following attack.

On admission the child walks with a sickle swing of the right leg, walks on the outer border of the foot, and drags the toes. The bladder and rectum were never affected. There is an atrophy of three-quarters of an inch of the right calf and of one inch of the thigh; no shortening. Patellar reflex is lost on the right side. The right leg and foot are very cold. The skin is healthy. Faradic irritability lost in left peroneal and very faint in the anterior tibial group. Galvanic irritability is diminished, and reaction of degeneration is present in the groups below the knee. The treatment was followed by slight improvement.

Case III.—Æt. 2 years. First seen nine months after the attack; was under treatment for 9 months, and in this time made 43 visits. Parents are English; the family history is negative.

Patient has always been a delicate child; had her first tooth

at 9 months, and began to walk at 11 months. In June was taken ill with malarial (?) fever; lay in a comatose condition for three to four days, and was very ill for two weeks. The mother did not notice any trouble with the limb until the child began to try to go about, which was between two and three months after the attack.

When first seen, nine months after the attack, there was a paraplegia, the left side being the most profoundly affected. The child walks with a sickle swing of the left leg, and drags the toes of both feet and walks on inside of left. There is an atrophy of three-quarters of an inch of left calf and one-half of an inch of left thigh greater than the right. The child is markedly anemic, and is suffering from gastro-enteritis and constipation. The bladder is normal. The child improved under treatment, but living in Paterson, N. J., and the mother again about to be confined, the visits were discontinued.

The patient was not seen again until December, 1892, three years and nine months after the attack and three years after the first visit. The atrophy of the left ealf has increased from three-quarters to one inch, and that of the left thigh from one-half to one and a half inches. The length of the limbs remains equal. There is marked atrophy of the left gluteal muscles. There is diminished faradic irritability in the right leg, and faradic irritability is barely perceptible in the left anterior tibial group and tibialis posticus. The child is still obliged to wear a brace on the left leg.

There was a marked improvement in all of the five remaining cases of this class, all of which, with one exception, remained under treatment for a much longer time, so that it would not be fair to argue from the length of time or the number of visits here given. In almost all cases, especially when severe, the improvement is very slow at first.

Case IV.—Æt. 23 months. First seen seven months after the attack. Was an "over-night" ease. The initial paralysis was not only limited to one, the left lower, extremity, but was not extreme; hence, although the child made only twenty-nine visits in a period of three months, we find the treatment was followed by a marked improvement. The child's parents lived in Boston, and the patient has been lost sight of.

Only one of the histories is interesting enough to warrant giving in detail, viz.:

Case V.—Æt. 15 months. First seen five months after the attack. Was under treatment for 10 months; in this time made 73 visits, or less than two visits weekly.

Family History.—The parents are German, both living and healthy. The maternal grandfather died of heart disease, the grandmother of cancer of the stomach. The paternal grandparents both died when the father was very young; cause not known. The father has also lost several brothers and sisters.

Personal History.—Patient was the eighth child; labor was normal, but long. Was a healthy baby. Had first tooth at 9 or 10 months—the mother is not sure which—and at 10 months was just beginning to stand by a chair; was teething at the time. The attack occurred September 12th. The child vomited in the evening. This was followed by a high fever which lasted for two days. Did not eat anything. On the third day the patient became unconscious and had convulsions; both lasted for nine days. There was retention of urine and feces.

Condition on Admission (five months after the attack).—The child sits alone perfectly well. He makes no attempt to stand by chair, even when held under the arms. Held in this position the left foot is everted to such an extent that the child stands on the dorsum of the foot. The reflexes are normal on the right side, lost on the left. The left limb is wholly powerless, and as the child sits the limb falls in external rotation, with the foot lying on its dorsal surface. The muscles are extremely flabby. There is three-quarters of an inch of atrophy of left calf and thigh; no shortening. In the left limb faradic irritability is almost wholly lost; galvanic irritability is greatly diminished, with the reaction of degeneration.

There has been a very marked improvement in this case, in which the paralysis was so complete as to be followed by the most marked deformity in only five months after the attack. The muscles above the knee are now in good condition, and there is good, although not complete, quadriceps power. With his brace on the child runs around well; without it there is still a tendency of the foot to turn on the dorsum. But galvanic irritability, which at first was almost wholly lost in the anterior tibial group, has now increased to such an extent as to produce good contractions. The prognosis is therefore good.

An interesting feature of this case, in connection with the general health, was that on admission there was present a marked

hoarseness, great enlargement and inflammation of the tonsils, also enlargement with tenderness of the submaxillary glands, and a croupy cough, to which the child has always been subject. These symptoms were only slightly alleviated by treatment. Five months after admission the child had an attack of measles, since when the hoarseness has disappeared. The general health is now good. Patient is still under treatment, and the improvement continues.

Class III. Under Treatment from one to five Months.—Nine were seen at periods of from fourteen months to twelve years after the attack, and were under treatment for a period varying from 1 to 5 months, with an average of 16 visits. In all these cases there was no improvement, or the improvement was very slight.

Class IV. Under Treatment from six to eleven Months (12).— These patients were first seen between two and nine years after the attack, the average time being four years and seven months. The greatest number of visits was 91, the least 19—average, 46. Of these, 4 were discharged for irregular attendance, not improved; 6 were discharged improved, and 2 with marked improvement. One of the latter was a house patient.

Class V. Under Treatment for one Year or more (21).—Of this class the average age on admission was 75 years; the average time which had elapsed after the attack was 57 years; the average length of time under treatment was 13 years; average number of visits, 1272, the least number of visits being 11 and the greatest number 340. Seven were discharged for neglect of treatment and irregular attendance, not improved. These patients averaged 14 years under treatment and made 35 visits yearly. Given a patient 8½ years old, with treatment begun 7½ years after the attack and making an average number of visits of 35 yearly, and from the very conditions of poliomyelitis anterior the prognosis must be hopeless. There has been extensive degeneration at the ganglionic centre, in the nerve fibres and muscles, and the treatment is far too infrequent to cause any stimulation of the few healthy cells and fibres left. In 9 cases there was some improvement, and in 5 cases the improvement was marked. The last being cases of such long standing, the histories will be given in full, and are as follows:

Case I.—Patient æt. 4 years. First seen three years after the attack. Initial paralysis, right lower extremity. Previous

treatment, brace and electricity. Under treatment 13 months; 116 visits; average, 2+ weekly.

Status Presens.—Very anemic; well nourished; urticaria. Child stands on the inside of the right foot, with the knee strongly adducted. Walks with sickle swing of right leg, on the inside of the right foot, and drags the toes. The groups most affected are the anterior tibial, the tibialis posticus, and quadriceps. Has partial quadriceps power, with diminished patellar reflex. Patient falls a great deal in walking. Faradic irritability greatly diminished. Treatment, galvanism.

Result of Treatment.—General health good. Walks without

a brace. Faradic irritability nearly normal.

CASE II.—Patient æt. 5 years. First seen three years after attack. Initial paralysis, right lower extremity. Under treat-

ment 2½ years; 273 visits; average, 2 weekly.

Status Presens.—Thin; anemic; subject to chronic tonsillitis and enlarged submaxillary glands; the tonsils are now so large as to nearly obstruct pharynx. Has pain in the right hip; the leg gets tired quickly. Talipes equino-valgus. There is shortening of one-half of an inch of the right leg. He cannot go up-stairs at all. In walking supports the right thigh with the hand, and the toes are turned at right angles to the body. Quadriceps power and patellar reflex are lost. Cannot raise foot off the floor. The leg and foot are very cold, the skin mottled. The toenails have not grown since the attack. Faradic excitability is almost wholly lost.

Result of Treatment.—Improvement in the general health. Last summer was dangerously ill with enteric fever; has not been so well since as previous to that time. Patient can now raise the right foot off the floor, with some quadriceps power; patellar reflex diminished, and partial dorsal flexion. With the knee sharply flexed can bring the foot up on a level with the trunk. The toenails now grow as fast as on the sound foot. He goes up the stairs of the Elevated easily. The improvement has been most marked in the thigh muscles. There has been no increase of girth of the calf.

Case III.—Patient æt. 6 years. First seen two and a half years after attack. Initial paralysis, trunk and both lower extremities; on admission, erector spinæ and both lower extremities. Under treatment 18 months; 162 visits; average, 2+ weekly.

Status Presens.—Cannot walk at all. Tried crutches, without braces, but could not use them. Child can stand only by holding on to table. The weight rests on the left leg; right knee is held forward. Rising from a chair takes patient a long time to balance herself, and then the trunk is thrown forward. Dorsal flexion is lost on the right side, and quadriceps power with patellar reflex on both sides. Legs and feet are very cold, mottled; shortening of three-eighths of an inch right side.

Electrical Reactions.—Faradic irritability is wholly lost in the right lower extremity and left quadriceps, diminished in remaining groups.

General Health.—Very anemic; gastro-enteritis; constipation; complains of being tired all the time; pain in the back; is very nervous and irritable.

After the braces were made the child could walk, but she walked awkwardly and was soon tired. She could not walk up- and down-stairs, but had to be carried. Three months later the parents moved over from Brooklyn that the patient might be near the Orthopedic, as she was too heavy for the mother to carry.

On discharge—because the parents were going to move to Boston—after being under treatment for less than eighteen months, six weeks of the last summer being spent in the country, the following improvements had taken place: The health was good and the child robust-looking. The "tired feeling," nervonsness, pain in back, and leucorrhea have all disappeared. The bowels are regular.

The child can now go up- and down-stairs slowly. She runs about all the time with her braces on, and when the left hand is held can walk without them; gets up from chair quickly by supporting the right thigh with the hand; sickle swing of the right leg. Gain in girth of right calf $\frac{6}{8}$ inch, left calf 1 inch, and in the right thigh $2\frac{5}{8}$ inches, left thigh $2\frac{5}{8}$ inches.

Electrical Reactions.—Faradic irritability good on left side, simply perceptible on right, and wholly lost in groups below right knee.

Case IV.—Patient æt. 12 years. First seen eight years after attack. Initial paralysis, trunk and both lower extremities; paralysis on admission, erector spinæ and both lower extremities and bladder. Under treatment for 15 months; average visits, 3+ weekly.

Status Presens.—Very emaciated and anemic. Has had no control over bladder since attack; constant dribbling, and to this the mother attributes the frequent colds to which the child is subject. The patient walks with crutches, "but falls down all the time." She cannot stand or walk alone. She gets up from the floor with the greatest difficulty and with a "climbing motion." There is a dislocation of the left hip as a result of the paralysis. Both ankle joints are "flail." There is nearly complete paralysis of both lower extremities; on the left side there is some vastus internus, sartorius, and slight quadriceps power. The atrophy below the knees has left only "straight sticks." With crutches she stands on the inner border of both feet. Faradic irritability is lost, except in a few groups where it is barely perceptible. Galvanic irritability greatly diminished, with reaction of degeneration.

Result of Treatment.—Medicine was taken by the patient until the bowels became regular and she had regained complete control over the bladder. Fifteen months later: Instead of the anterior tibial groups being most affected, the tendency now is to a double calcaneo-valgus. Both tendines Achillis have become elongated, and there is dorsal flexion on both sides. The patient gets up from the floor quickly and easily. With her braces she walks well with her crutches; without the braces she can walk with one crutch. There has been a gain in the right calf of $\frac{3}{16}$ inch, left $\frac{2}{16}$ inch; gain of thighs is equal and is $\frac{5}{8}$ inch.

Faradic Irritability.—On the left side good contractions of the gluteal and quadriceps. Contractions weaker but fair in the anterior tibial, very feeble in the tibialis posticus, and lost in the calf muscles. Contractions on the right side are much weaker

In this case it was impossible to have any home treatment carried out after the first month or so. Electricity, with the braces, was all that could be done for the patient. The improvement in the erector spinæ, both gluteal, and left quadriceps power was very marked. The groups below the knees were so nearly gone that there was very slight improvement.

Case V.—Patient æt. 6 years. First seen three years after the attack. Initial paralysis, trunk and both lower extremities; paralysis on admission is confined to *right lower extremity*. Under treatment 3 years; 340 visits; 3 months at shore; average, 3+ weekly.

Status Presens.—Well-marked jaundice; thin. Foot in position of equino-valgus. Walks with a sickle swing of the right leg, and the toes turned at right angles to the body and the knee flexed. Quadriceps power, patellar reflex, and dorsal flexion lost. The right leg and foot are cold, the muscles of the thigh flabby, and the shapeless leg has the appearance of skin drawn over the bones. There is shortening of 1½ inches. Faradic irritability is lost. A mild galvanic current fails to elicit the contraction of any single muscle or group of muscles, but throws the muscles of the entire limb into a state of tetanic contraction.

Result of Treatment.—General health is good. After tw years' treatment, gain in right calf, ½ inch; gain in left calf, 1½ inch; gain in left thigh, ¾ inch. After three years: gain in left calf, ¾ inch; gain in right calf, none—remained the same; gain in left thigh, none; gain in right thigh, ¼ inch. The tone of the muscles of the right thigh is now good. Quadriceps power good, with diminished patellar reflex. Dorsal flexion remains lost. Faradic irritability of quadriceps is only slightly lowered, and a strong current produces contraction of all the groups. Child runs around all the time with her brace on.

Summary of the Result of Treatment, Class V.—On admission these five patients ranged from 4 to 12 years of age, the average age being 6 years and 7 months, and were first seen from two and one-half to eight years after the attack, or an average of four years after the attack. Three of these patients had for some time previously had mechanical treatment only, no attention being paid to the general health or local stimulation of the affected leg.

On admission there was in all cases marked anemia, associated in two cases with great emaciation. In addition we find in one case urticaria, two cases gastro-enteritis with constipation, one chronic tonsillitis and enlarged submaxillary glands. One had pain in the right hip; one pain in the back, is nervous, and complains of being tired all the time; and one has lost all control over the bladder. All except the last named are symptoms of the tubercular diathesis, and in all-cases there was marked improvement of the general health. Cases 6 and 3 were discharged; general health good.

Local Condition on Admission.—In three cases the paraly-

sis was limited to one lower extremity. In one case there was partial quadriceps power with diminished patellar reflex. In two cases quadriceps power, patellar reflex, and dorsal flexion were wholly lost. All these patients fell frequently, and two could not go up-stairs at all.

Electrical Reactions.—In one case faradic excitability was so greatly diminished as to be non-effective for treatment, in one case almost wholly lost, and in the third wholly lost. Galvanic excitability was good in one case, very greatly diminished in one, and in the third a mild galvanic current fails to elicit a contraction of any single muscle or group of muscles, but throws the entire limb into a state of tetanic contractions. The last named is the only case of the kind I have ever seen.

The mildest case was discharged functionally cured. The two others are still under treatment. In one, the last named, the quadriceps power is now good, patellar reflex is only slightly diminished. Both these children run around now all the time with their braces on without getting tired, and the child who could not go up-stairs at all now goes up the Elevated stairs easily. In both these cases the faradic current gives fair contractions of all groups below the knee. These groups were the ones most seriously affected. In one case there has been an increase in the girth of the thigh only, and in the other there was an increase of the girth of the calf as well for the first two years of one-half of an inch; during the third year the girth of the calf remained stationary.

The two remaining cases were both paraplegias with an involvement of the erector spinæ muscles. One child could not walk even with the aid of crutches, and the other one used crutches but fell down all the time. Neither could stand alone, and both got up from the floor or chair with the greatest difficulty, and one with a climbing motion. As a result of treatment both patients got up from the chair or floor quickly and easily. One patient with her braces walks well with crutches, and without her braces can walk slowly with one crutch. The other patient runs around all the time with her braces on and can go upstairs slowly; without her braces she can walk if her hand is held.

In view of the above-cited cases, we feel justified in making a more hopeful prognosis, even in long-standing cases, than either Strümpell or Gowers, already quoted—i.e., "What has not

recovered in the first week or month usually remains paralyzed for the whole of life," and "at the end of six months all possible recovery is nearly completed, and certainly at the end of a year further improvement will be merely by the slow growth of the muscle, and it occurs equally well without treatment."

These cases had been left without treatment sufficiently long to prove conclusively that the improvement was due to the treatment. And whereas cases under observation, but not treated, grew distinctly worse, while the cases that were regularly and systematically treated made a marked improvement, the improvement in most cases being in direct proportion to the activity of the treatment, it follows that, where there is not deformity or contracture of the muscles which cannot be overcome by operation, in all cases where galvanism causes a fair contraction of the muscles we can safely promise the patient there will be an improvement. But the earlier the case is undertaken the more hopeful will be the prognosis.

68 West 50th street.

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PLACENTAL EXTRACTOR.

BY

L. H. DUNNING, M.D., Indianapolis, Ind.

(With one illustration.)

A few weeks ago I found much difficulty in extracting the membranes and placenta in a case of abortion. The os was not well dilated, but I was able to introduce one finger into the uterine cavity, yet found it impossible to extract the placenta. No better success attended the use of the dull curette. The site of the placenta was located. The thought struck me that by bendding the point of a sound into a hook I might entangle the membranes and by traction extract the placenta. Picking up a flexible sound, I bent it into the shape of the instrument figured, introduced it into the uterus against the placenta, rotated the



instrument, and quickly extracted the placenta. The instrument also served me a good purpose in a similar case last week. In the latter case a part of the decidua and membranes had been delivered, and the remainder was partially detached but was not easily delivered. The loose part of the remaining portion was easily entangled in the extractor and quickly removed by gentle traction. I am inclined to believe this instrument will be found to serve a useful purpose in the class of cases mentioned.

It can inflict no damage upon the uterine tissue if properly used. In employing it, it is best to find the location of the placenta by sound or dull curette, then pass the instrument into the uterine cavity and up against the decidua or placenta, rotate once, and make gentle traction. If the membranes or a portion of the placenta have been entangled they will follow the instrument on its withdrawal. The drawing shows well the form of the instrument.

249 NORTH ALABAMA STREET.

CORRESPONDENCE.

THE FUNCTIONS OF THE OMENTUM.

To the Editor of The American Journal of Obstetrics, etc.

Dear Sir:—In the December number of this Journal Dr: Ross says: "Peritonitis is a disease to which dogs are little subject." He then quotes the name Stables as asserting that wounds which will cause inflammation of the peritoneum in horses and other animals, in dogs heal kindly. I cannot agree with the above statement. I have operated on the peritoneum of over two hundred dogs, and, so far as I can see, dogs are just as liable to peritonitis as man. At first I lost most of the dogs from peritonitis, but by practising careful cleanliness I soon could save most of them. In my experience with dog's peritoneum I am convinced that man and dog are about equal in their power to resist infective invasion. So far as I can observe macroscopically, peritonitis in dog and man is precisely the same process. I have examined about two hundred dogs post mortem, and most of them had some form of peritonitis.

In regard to the omentum in dogs, it appears to fulfil exactly the same purpose that it does in man—viz., (a) to prevent the invasion of infection. I have seen the omentum actually stop bullet holes in dogs' intestines and prevent extravasation. It hems in and circumscribes infection wherever it arises, be it in the appendix, in the fimbriæ of the Fallopian tube, in the colonic flexures, or at a perforation. (b) It prevents the adhesion of the intestines to the abdominal parietes. I found that if I did not carefully replace it in abdominal section in the dog, from one to several inches of gut became firmly attached to the abdominal incision. (c) It facilitates visceral movement.

In regard to the peritoneum of animal life, it may be observed that it lessens proportionally as the grade of life ascends. Man possesses relatively the least peritoneum of all animals. A dog's peritoneum is very ample in its folds; so is that of the horse, cow, and pig. It is curtailed in the monkey and ape

tribe. We are not yet in a position to state positively what animal's peritoneum will resist the most infection, for some animals may resist with ease certain kinds of microbes which would kill another species. Practical experience is the only guide. The mortality from spaying female animals may be compared. Sows seldom die from spaying. Cows do not appear to resist the operation as well as sows. Spaying mares is so fatal that it is not generally practised. Little can be done surgically in a horse's peritoneum, on account of the frequent peritonitis that follows. Prof. Baker, of the Chicago Veterinary College, informed me in conversation the other day that a horse's peritoneum was ten times as sensitive to infection as a cow's. A horse's peritoneum I know is very vascular. We must have much more comparative work done before we can state what animals most resist infection, and why. I was very much interested in Dr. Ross' excellent article.

Respectfully,

F. BYRON ROBINSON.

CHICAGO.

TRANSACTIONS OF THE CHICAGO GYNECOLOGICAL SOCIETY.

Meeting of June 16th, 1893.

The President, Fernand Henrotin, M.D., in the Chair.

ADDRESS BY MR. ERNEST HART.

Mr. Hart, the guest of the evening, said: I highly appreciate the honor and greatly value the courtesy which your Society has extended to me. Although I have absolutely no personal gynecological experience, still I thought possibly some few recollections of the progress of gynecological science in England, with especial reference to the individuals who practise it and the influence on its progress of some of your great American gynecologists, some of whom from time to time have not only visited but have settled in Europe, might be interesting.

I could not but remember, when I got your kind invitation, sir, that I have never, since I became a student of medicine, now exactly forty years ago, studied obstetric medicine, and as I entered surgery as a pure surgeon I have never felt called upon to study it. Such was the state of medical examinations in England that I was never examined in gynecology in any of its

branches. The College of Surgeons of England at that day, presided over as it was by some of the greatest surgeons of the day—by Lawrence, by Brodie—thought so little of gynecology and obstetrics that it was not thought a necessary part of a surgeon's education. I not only had never delivered a woman, but had never seen an accouchement. That of itself indicates the immense progress which has been made within the course of a comparatively short lifetime. I suppose there is no college in the civilized world now that would think it possible to graduate any man without requiring him to have a knowledge of

obstetrics and gynecology.

As I was thinking the matter over this morning I recalled some interesting facts that have great bearing not only on gynecology but on the practice of the surgeon. The school I entered was attached to St. George's Hospital, and the head of that school was Samuel Lane, who founded it. He was the first British surgeon to perform ovariotomy. He performed it on a relative and under peculiar circumstances; that is to say, at that time to perform an ovariotomy was as much as any man's reputation was worth, and only a very bold, a very daring, and a very conscientious surgeon would have dared to do it. Attached to the same hospital was a lecturer on obstetrics who has a great name in medicine-Robert Lee. He is known throughout the civilized world for his invaluable researches on the nerves of the uterus, and his is one of the greatest names in obstetric anatomy and surgery. Robert Lee was violently opposed to performing ovariotomy. Another surgeon had arisen since Lane's operation. Of course I do not forget that the first ovariotomy was performed by an American practitioner. But about the time Lane performed his first ovariotomy another gentleman began to practise ovariotomy pretty extensively and with extraordinary success, and he was remembered as the real founder of ovariotomy as a surgical procedure. That was Baker Brown, who with Lane founded what is known as the St. Mary's Hospital of London. Although Baker Brown performed many ovariotomies with success, so great was the hostility to the operation that I have heard Robert Lee more than once declare publicly that any surgeon who performed ovariotomy with fatal results to the patient, which he thought would inevitably follow, should be accounted an offender against the laws of his country, and that he would, if possible, have an inquest upon every case and endeavor to secure the punishment of the surgeon who performed the operation. That shows the remarkable change of opinion which has occurred in my lifetime. There are other interesting lessons which gynecologists ought also to take to heart. time Baker Brown signalized himself for his extraordinary daring, courage, and skill, so that he not only established this operation in his own country but for the whole world, Nélaton, the great French surgeon, came over to England to learn ovariotomy from Baker Brown; for up to that date the operation had proved so fatal in Paris that not even Nélaton dared perform it there. But at that time all French surgery was fatal, and even murderons, because it was unclean. This was explained by Virchow, in the Academy of Medicine, by declaring that there was something in French flesh which prevented ovariotomy from succeeding. Nélaton, however, who was very English in his sympathies, was led to think that probably there was something in the air of Paris which prevented its success, and the first ovariotomy Nélaton did after seeing Baker Brown operate was performed in a house outside of Paris that he took for the

purpose.

Baker Brown, then, deserves to be remembered always as the real founder of ovariotomy. His is a very instructive case, because he was charged with reporting from time to time his favorable cases, but not reporting fully his unfavorable cases; at any rate, his reports came to be very much doubted. His career closed, as we know, under the most painful cloud, and it is very doubtful whether that operation would ever have been established in England but that a surgeon of high character, great integrity, and extraordinary candor took up the operation, admitted all of its defects, published all of his difficulties, reported all of his failures, and by his transparent honesty, candor, and courage, not less, and perhaps even more, than by his great operative skill, established ovariotomy on a basis which has never since been shaken and which is now universal throughout the world. I mean Spencer Wells. Spencer Wells and Keith, the two great English ovariotomists, have distinguished themselves by this, that they have invariably reported every one of their difficulties, every one of their failures, and that no one ever suspects them of any exaggeration or omission. And I want to emphasize, in passing, the extreme importance of that for all gynecological procedures.

I have also seen other interesting phases which might easily escape the memory, but one remembers the amount of progress of gynecology and the remarkable way in which it has influenced favorably the whole progress of surgery. I remember, when I began the study of medicine, Henry Bennett, who died only two years since, came fresh from the Paris schools and brought over the speculum, which had first been introduced at the Hôpital Saint-Lazar. And the same opposition was raised to the use of the speculum. It was denounced as an instrument unfit for use with modest and respectable women, and only suitable for that class of women who were found at the Hôpital Saint-Lazar. It was called a foul instrument which no decent Englishman would permit himself to use, and to which no decent woman ought to subject herself. There again courage and character triumphed, and, by a rather interesting concordance of circumstances, it happened that they were accidentally placed in a position in

which they could make a great impression. Henry Bennett, Tyler Smith, and Robert Barnes were all three in succession sub-editors on the staff of a great paper, and therefore they were able to carry on a very violent contest with great advantage; and the introduction of the speculum from that date has spread with great rapidity, and you know better than I can tell you how vital and of what primary importance it is in all of your

procedures.

Then I remember when a great American gynecologist made his appearance in my country, and I had the happiness of offering him hospitality for several months. That was Marion Sims, who had to leave New York on account of his Southern proclivities, and he thought it well to go over to Europe until matters were settled. Marion Sims introduced new methods and a new and vastly improved form of speculum, a new method of dealing with vesico-vaginal fistula, and the wire suture, the precursor of the antiseptic method. And again I recognize in Marion Sims a peculiar path-breaking obstetrician and gynecologist, who created a new path for himself and all who came after him, which has never been closed and never can be. And why? Not because his skill was so great, but because every method Marion Sims introduced was characterized by the pure honesty of the man. He found that the operation for vesico-vaginal fistula had not succeeded because men had been fooling in the dark; they had not had the courage to bring the parts quite down to the light, and had never had the candor to acknowledge that they had not completed their operations thoroughly. His method was one which, when once known, any child might have invented. These are all historic men and instances, and I do not believe have ever been mentioned before. I remember when Sims went over to Paris. The great operator there on vesico-vaginal fistula was Elembro. Sims did not speak French, and Elembro did not speak English, so it was a matter of sight. Sims said: "I can't talk to him." I said: "No matter; get some one to ask him to show you his cured cases." He hunted for six weeks, but could not find one cured case. He was a great man. He described his method, did his operations, and I have no doubt made a certain number of cures, but he did not describe fully all the difficulties, the repetitions, the little failures; and there was where Sims made his immense success and broke a fresh path for gynecologists, and that, I think, will always remain to the honor of American gynecology.

Then I remember Sims making in my journal a suggestion which at that time seemed preposterous, but such has been the influence of gynecologists that laparatomists now do a hundred things which twenty years ago would have been thought criminal. But it was Marion Sims who first, in the *British Medical Journal*, suggested and described cystotomy for gall stones, which he did, and for the first time. The second suggestion was

an operation which he had not done, but described and recommended: it was incision of the abdominal walls and searching out the intestines for gunshot wounds. I remember talking about this to a great surgeon, who said it was fantasy, a wild imagining. But that operation is now done throughout the world and is one a great Chicago surgeon has done much to

improve and complete.

Finally, I would mention another thing which the gynecologist has done for us in Great Britain. He has broken down the absurd barrier which existed until very lately, and in the minds of conservative physicians still exists, and which divides the practice of medicine from the practice of surgery. Any Fellow of the College of Physicians of London who would soil his hands with the knife would have committed a most serious offence against the dignity of the profession; the knife was for the surgeon, and medicine for the physician. But the gynecologists rebelled, and Tyler Smith and Robert Barnes, both Fellows of the College of Physicians, insisted that, being obstetrical physicians, they had a right to practise the full range of gynecology, and they claimed and have won for physicians throughout England the use of the knife. American gynecologists and laparatomists have for many years taken the most advanced position in the ranks of the surgeons and physicians of the world, and we shall always look with the greatest interest on everything that comes from this side; but still there remains the suspicion that men are too much disposed to describe the most favorable results of their operations, and do not enter into the public confessional sufficiently in respect to their failures and difficulties. This does not by any means apply only to the gynecologists of America, but certainly this suspicion exists in my own country and elsewhere.

I mention these things to show how much has been achieved by American and British gynecologists in surgery, and the enormous force of candor as well as capacity and of courage in

self-confession as well as of courage in operating.

Dr. E. C. Dudley discussed the

RADICAL CURE OF HEMORRHOIDS BY FORCEPS PRESSURE.

Several months ago I was doing the clamp-and-cautery operation for hemorrhoids. I had an ordinary Allingham cautery clamp, which I screwed down upon the pile, leaving only a small portion of the pile above the clamp to be cauterized and a much larger portion within the grasp of the clamp, and in cauterizing here I said to the gentlemen who were present that it had always seemed to me strange that the destruction of such a small portion of the hemorrhoid by means of the cautery should cure the entire hemorrhoid. Following that line of reasoning, I came to the conclusion that it was not altogether

the cauterization that destroyed the hemorrhoid; the cauterization only destroyed such part as was cauterized and removed, while the squeezing by the clamp caused obliteration of the blood vessels in the remainder of the pile. Lately in cases of mild hemorrhoids I have clamped them entire with broadbladed forceps, and the result has been the cure of the hemorrhoids. There has been no sloughing, no scar, no bleeding, and the operation appears to be quite practical. Then in looking up the literature I found that Allingham, of London, the son of the elder Allingham, had used a similar method—that is, the cure of hemorrhoids by simply crushing them. Through the, kindness of Dr. Andrews I have here the Allingham clamp. This works by screw; the pile is pulled through this fenestrum, then this hammer is screwed down upon the pile; the pile is thoroughly crushed. The pressure is allowed to remain on for five minutes and then is removed. The objection to this instrument is, it is not large enough to take in the whole of the pile. The pressure should include the entire hemorrhoid.

I have operated now about twenty-five times for the radical cure of hemorrhoids by this method; there has been no failure in any case, no case in which the hemorrhoid has sloughed, no case in which the cure was not complete. I have not used this method in very large hemorrhoids. This forceps is the one I use. It has a very large blade with great compression power, the blade being large enough to include the hemorrhoid. Now, the advantages claimed for this method are, first, it cures the hemorrhoid; in the second place, it does not produce sloughing, and therefore does not mutilate the patient; third, there is less pain; fourth, there is little or no hemorrhage; fifth, less danger of sepsis or of embolus. I have also noticed in these cases that the prolapse of the anus which frequently complicates these hemorrhoids is very apt to disappear with the cure of the hemorrhoids, although I have not used it for simple prolapse, and hardly think I should; but where the prolapse is a complication

of the hemorrhoid it seems to cure it.

The important thing in this operation is to crush the entire hemorrhoid and not leave the distal portion uncrushed.

Dr. Edmund Andrews.—I deem the crushing of the pile to be a valuable addition to our resources; it enables us to cure them without sloughing. And whether it is quite as absolutely free from risk of possible hemorrhage may be doubted; but it is probably freer from the risk of sepsis, since after the ligation of the pile it is almost impossible to protect the stump from septic action, except to an imperfect degree. The clamps which have been used heretofore, Allingham's clamp particularly, are liable, if injudiciously used, to tear the pile at the corners, if it happens to be pretty large to pull in, and there might be a point of hemorrhage, there being no valves in these veins above.

The method proposed by Dr. Dudley, to crush the pile by a

flat-jaw forceps, seems likely to obviate the risk of tearing, provided it is judiciously used, and therefore it will probably work well. Of course one would want to see the instrument finished and try it a few times before being able to form an absolute judgment about it, but I presume it will work satisfactorily.

Dr. E. Wyllys Andrews.—I got this Allingham instrument early after its invention and used it a number of times, but never expect to use it again. No one can question the value of the crushing operation in suitable cases, but this instrument is clumsy and dangerous. Dr. Dudley's instrument will certainly be better for the reasons he mentions; it is broader and therefore safer, and it is vastly easier to apply. This instrument is difficult to use, it takes the pile transversely, and its edges almost invariably cut the mucous membrane; in one or two cases I have produced hemorrhage with it. There is no doubt that the crushing of the hemorrhoid will cure most cases. My experience with the method leads me to conclude that it is far less painful in the after-treatment. In no case have I had sloughing of the pile which has been crushed. In cases of large-sized hemorrhoids, treated with the utmost thoroughness with this instrument, where there was great hyperplasia and new connective-tissue growth was extensive, I have entirely failed to relieve or cure the patient, and have afterward been obliged to operate on the same patient by cautery or Whitehead's operation. I believe that large, hypertrophied old hemorrhoids cannot be cured by the clamp alone. The tissue outside the clamp must be cut away or the tumors will remain. The method then presents no advantages over the cautery.

Dr. J. B. Bacon.—I have never used this crushing method, for the reason that I have had good success with the clamp and cautery. When I first began to operate on hemorrhoids I read an article by Dr. Pollock, of England, in 1880, in which he described his methods. He began with a forceps instrument, probably similar to this, but had to discard it because it did not give pressure enough. Allingham tried the forceps for crushing hemorrhoids, but discarded it entirely and invented a crushing instrument. The instrument exhibited here is improperly made: it is sharp on the edges. Allingham had some serious hemorrhages on that account when first using it, and he calls attention to the fact that the instrument must be properly made. He now has the edges bevelled, so that the pressure will come in the centre and not cut off a blood vessel. By this screw pressure

he gets an enormous crushing power.

There is one thing in Dr. Dudley's paper I object to; that is, "the radical cure of hemorrhoids." That, I think, will be utterly impossible by any method except dissecting out the hemorrhoidal patch of mucous membrane. Most hemorrhoids are dilatations of the hemorrhoidal veins in the mucous membrane, and they anastomose with the veins in the submucous tissue, and there are

vessels diseased between; so you cannot make a radical cure of a hemorrhoid by crushing it off. A radical cure of the external hemorrhoidal veins that are diseased around the anus would be impossible with any method except dissecting out the veins so there could be no return. With the clamp and cautery we only take off those veins that are troubling the patient, and there are always diseased blood vessels left, so a radical cure by the crusher and cautery would be impossible. In selected cases there is no doubt the doctor's instrument will be quite a success. I think it will be the most successful if applied to internal hemorrhoids; but to the external hemorrhoids, where there are many nerves to be crushed and injured in the operation, I think it will prove to be more painful than the clamp and cautery. Then to use this instrument you must give an anesthetic and thoroughly dilate the sphincter; these are two dangerous things in operating for hemorrhoids. In dilating the sphincter the danger would be of having incontinence afterward, so I do not see where you have any advantage over the clamp and cantery.

Mr. Ernest Hart said: There is in the minds of most English surgeons a great objection to any operation on the mucous membrane involving crushing or bruising and leaving the membrane within the cavity of the body. There have been various methods introduced for this treatment, but they have never lasted permanently. The result in the minds of the greater number of surgeons is strongly in favor of the simpler method of drawing down the pile, using scissors curved on the flat, completely isolating the mass to be removed, and if necessary converting it into several masses by the method of division, and then dividing the mucous membrane circularly around the base and ligaturing the pedicle, which is now very small and containing the nutritive vessels of the pile. The most careful dissections have shown, in the anatomy of the pile, that the vessels of the pedicle are always vertical and the chief vessels of the pile traverse it vertically. I have seen a good many hundreds of cases and have never seen any hemorrhage. It is always possible to find a very small pedicle for each series of piles, and to ligate that pediele circularly, dividing the mucous surface and passing the ligature around the cellular tissue and the artery and vein which feed the pile. Mr. James Lane, who was my colleague at St. Mary's, and who was surgeon for many years at this hospital, performed some two thousand of these operations and never had a hemorrhage, never had a fatal result. He was also free from a result which has sometimes followed crushing operations, with the cautery or not—that is, tetanic symptoms, and sometimes a fatal tetanus. So it is the general opinion that crushing and leaving the lacerated mucous membrane is a generally undesirable method, but I have no doubt that Dr. Dudley may get with his instrument much better results than have been attained by us.

DR. E. C. Dudley, in closing the discussion, said: In regard to the question of hypertrophy in the region of these piles, I think in many cases the enlargement resulting from congestion is called hypertrophy when it is nothing more or less than dilated vessels.

The question of tetanus is a very serious one, and I should think it would be rather more serious in localities where tetanus is likely to occur; it may be that the danger of tetanus is suffi-

cient to contra-indicate this crushing process altogether.

The question of leaving the forceps on for longer than five minutes is one I cannot answer. I think I left it on myself about five minutes. The cases in which I have used the forceps have been only moderate hemorrhoids, and four or five minutes have sufficed to make a cure. I did not mean, in using the words radical cure, to say that it is a radical cure in the sense that the patient can never have piles again.

In the operation with the electrode the same objection would apply to the use of the word radical, and yet it has been used in several hundred cases at least. I can recall no case in which I have been obliged to repeat the operation, therefore the electrode has radically cured these piles, although it has not de-

stroyed all of the soil in which the piles may develop.

I think this method is much more likely to be indicated in the very mild cases; certainly danger of tetanus would be greater if much tissue were crushed. An important advantage in this operation is that it does not produce any permanent mutilation of the parts. My experience has not been that dilatation of the sphincter has resulted in permanent incontinence of the bowel.

With reference to Dr. Byford's case, I am sorry he did not succeed in this case in relieving the patient by this method. Of course no method is perfect, and therefore any method, no

matter how well applied, may be followed by failure.

The question of Dr. Robinson about the embolus I cannot answer. I should think that danger of embolus would be less

in crushing than in incising.

Dr. H. P. Newman.—I wish to ask if these operations have been done for hemorrhoids alone or in connection with other pelvic operations, and whether you would not attribute some

of the cures to repair of the perineum.

DR. E. C. DUDLEY.—In almost every case they have been done in connection with other operations in gynecology. Undoubtedly some of the cures could be attributed to repair of the perineum, and some to stretching of the sphincter muscle.

DR. E. WILLYS ANDREWS read a paper on the

CURE OF HEMORRHOIDS BY ELECTROLYSIS.

Dr. J. B. Bacon.—With regard to the hypodermic injection of hemorrhoids with carbolic acid, I have had considerable

experience and so far have had no bad results. After reading Dr. Andrews' work on the methods of treating hemorrhoids I have been very careful in using that method, and never use it except in selected cases. I think the only way to use carbolicacid injection safely is to compress the base of the hemorrhoid before making the injection, so as to confine the effect of the acid to the hemorrhoidal tumor for a few minutes, and then it will not be apt to extend up the vein. With this idea I have had Truax make me a rectal speculum, and, instead of being made out of the ordinary metal, it is made of spring steel with a handle on it which opens a spring; it is closed when you let loose the handles. You locate the hemorrhoid with the finger, and introduce the instrument with the slot over the position of the hemorrhoid, and open it, then you let loose the handles, and the instrument closes on the hemorrhoid and keeps all other tissues out of the field of operation, and presses the hemorrhoid at the base so you can inject it; so in selected cases

I think we can use carbolic-acid injections.

I have been using electricity in a few cases. I took a pair of forceps to the instrument maker and had it insulated with hard rubber except about an inch of the extremities of the blades. It is made slender and weak, so as not to compress the hemorrhoid too strongly. I fix the hemorrhoid with this forceps, which is used as the positive pole by attaching it to the handle. I am able to thoroughly puncture the hemorrhoid at different parts with these needles. I have used it with four hemorrhoids, two in one case and one in two others, and it decidedly decreased the size of the tumor; there would be slight hemorrhage afterward from venous blood. I am glad Dr. Andrews has developed this further than I have. In my next experiments I am going to catch the hemorrhoid at the base with the forceps and inject the tumor with iodide of potash, then turn on the current and decompose that iodine, which will thoroughly permeate the tissue of the tumor. I will do this with the idea of making the tumor thoroughly aseptic and also get the destructive effect of the iodine. Other medicines could be used in the same way and interesting experiments carried on. I think there is a great future for the electrolytic treatment

Dr. Franklin H. Martin.—I have had absolutely no experience in the treatment of hemorrhoids by electricity, but I am interested in anything that is treated by electricity, especially when that agent is applied by intelligent men in an intelligent manner so as to produce accurate results. I can see no reason why embolism should not occur in the treatment of hemorrhoids as described by Dr. Andrews, as readily as by the injection of the hemorrhoid with carbolic acid. It is well known that the two poles of the battery have diametrically opposite effects when applied locally: one is to produce an acid cautery by the positive pole, which

which coagulates the albumen, and the opposite is to produce an alkaline cantery, which liquefies. There is no reason why, therefore, if the poles are near together in cauterizing a hemorrhoid, there should not be by the action a coagulation of the albuminous particles in the hemorrhoid. For that reason, it seems to me, there are obvious advantages in Dr. Bacon's method of clamping the base of the hemorrhoid with one pole constructed as a clamp. It does three things: first, it seals up the pedicle, by the action of the positive pole, against the possibility of immediate embolism, at least; second, the negative pole acts upon the tissue in its peculiar war on the fluids in the body of the pile; third, there is obtained the powerful antiseptic action of the two poles of the battery. The experiments of Apostoli and others have proved the powerful influence the galvanic current locally has in destroying the pathogenic microbe. So that you have a sealing up of the base of the pile, coagulation of the blood in the tumor, and the antiseptic action of the current,

making an ideal method for the cure of hemorrhoids.

Dr. Edmund Andrews.—I hardly think I can add much to the discussion. That harassing question about embolism will come up, and I am glad of what Mr. Hart said respecting the importance of reporting our failures, for there is a frightful amount of waste in scientific investigation in consequence of our not doing that. With regard to embolism, I think it may originate in two ways. Suppose I amputate a thigh and observe considerable oozing from the femoral vein; I ligate it, or it is closed in some way, and a clot forms in the closed end of the vessel. Things may go on in that way for several days, the patient doing well, and he may be beginning to get out of bed, be bright and cheerful and participate in festivities, and the next hour he may be dead, because the thrombus formed in the vein has gradually increased upward by the aggregation of the fibrin on the upper end, until it has passed up to where some considerable sized vein goes into a larger one, and by a movement it is broken off and carried to the heart. That is the way a portion of these sudden embolic deaths occur. I think, however, that in other cases the embolism has followed the injection of coagulants into the veins, whether in hemorrhoids or other parts of the body. For instance, a quantity of oily solution of earbolic acid has been thrown into an enlarged vein with the hypodermic syringe; it enters as a series of globules, and some of these may be carried to the liver if they get to the upper hemorrhoid; if, on the other hand, they enter the middle or lower hemorrhoidals, they may be carried to the heart and the pulmonary arteries.

Then, again, certain microbes infest the muciparous glandular follicles which honeycomb the mucous membrane covering the piles, and, as no external washing can reach them in the depths of the microscopic canals in which they exist, the pipe of the

hypodermic syringe may carry them forward and lodge them in the veins, where, some think, they may multiply in spite of the antiseptic character of the fluid used and generate septic thrombi. These two causes may be considered to exist, and they leave the harrowing fear of embolism. I think this is one of the cases where we ought to hold ourselves in doubt. We cannot make things certain by a parade of positive assertions. I think we do not yet know whether by any of these methods we

can wholly do away with the danger of embolism.

Dr. F. Byron Robinson.—I have known hundreds of these cases of hemorrhoids go to quacks and be injected, and I never heard of one dying. But the patient is not safe merely because he gets through with an injection of carbolic acid. His liver suffers afterward, because the blood from the rectum goes back to the liver, and these injections are likely to be carried to the liver and cause abscesses. It has been demonstrated that the veins of the rectum are only connected with the inferior mesenteric. The superior mesenteric vein has been injected, and not one particle goes through the two inferior veins of the rectum; then the inferior veins of the iliac have been injected, and not one particle goes through the superior mesenteric.

This has been demonstrated by Cripps, of London.

Dr. H. P. Newman.—I wish to refer again to the point I have raised as to the advisability of resorting to operative procedures in minor cases of hemorrhoids. Many of these cases, as you know, are the result of defective rectal support, lack of peritoneal tone, or rectocele, enhanced and aggravated by retroversion of the uterus and prolapsus. All that has been necessary, in my experience, has been to repair existing lesions of the pelvic viscera, replacing and sustaining prolapsed or displaced organs in their normal position. In some instances I practise stretching of the sphineter ani as an accessory measure, but it is rarely that I resort to any of the operations described to-night, and never in minor cases. In severer types these operations are undoubtedly indicated, but I think we may limit their applicability to such cases.

Meeting of July 21st, 1893.

The President, E. J. Doering, M.D., in the Chair.

Dr. Joseph Price, of Philadelphia, read a paper on

POST-OPERATIVE SEQUELÆ IN ABDOMINAL AND PELVIC SURGERY.

Dr. Franklin H. Martin.—There are a few facts about electricity that I think possibly Dr. Price does not know, and the reason I think so is that about three weeks ago in Milwaukee I asked

him if he had ever used electricity in gynecological practice, and he said: "No, I have not, but I have seen its results as used by other men." Now, that is admitting that Dr. Price has not had personal experience with electricity, and what he has to say about it is on the results as he saw them obtained by others. I believe he is not in a position to judge of those results. Cases come to me as an electrician, and I am an abdominal surgeon, so I can speak without a great deal of prejudice. Cases that come to me as an electrician from abdominal surgeons are of the most desperate character; they are cases on which they could not operate, or they would not have referred them to mecases of abdominal tumors, for instance, with old pus tube; cases in which adhesions are extensive, where it is simply impossible to remove the tumor without removing the patient. Those are the cases which cannot be treated by the surgeon, therefore they are turned over to the electrician; or they come to the electrician because of not receiving benefit from other surgeons. Those cases are occasionally treated by electricity with the idea of relieving symptoms that there is no possibility of relieving in any other way. In many of these cases the tumors are reduced in size, the hemorrhage stopped, the pressure relieved, and the patients greatly improved. We do not remove pus or sterilize it, therefore in those cases electricity is positively contra-indicated. And in these latter cases—cases where we fail and they go to Philadelphia—to electricity will be attributed the cause of the pus. There is this fact: electricity is one of the most powerful antiseptics we have. tra-uterine positive pole with a one-hundred-milampère current is the best antiseptic we have in the world. Then it is not the electricity which infects a patient, but it is the result, if at all, of the abuse of the electricity—improper strengths, improper electrodes, and indiscriminate and unsurgical procedures. Even if the sound is dirty, electricity properly used will render it aseptic—that has been proved in the laboratory, and is a wellknown fact in practice; therefore electricity does not produce pus tubes, electricity does not produce adhesions. The abuse of electricity, or the abuse of any remedy in abdominal surgery or any other branch of medicine, does harm, and only there you can attribute harm to electricity. I say these things because I have not only these theoretical points, but I have operated on cases where electricity has failed, and I have never observed a case where electricity has harmed or complicated the condition. Electricity is a powerful means of relieving symptoms in certain cases; it is a symptomatic remedy: it very rarely produces a cure. I repeat, I have operated on a great many cases, and I have yet to find one direct proof that electricity has produced adhesions or pus tubes.

I wish to say one thing in regard to the removal of organs by

the vagina. Dr. Price stated in his paper that it was unsurgical to remove pathological tissue through the vagina. I would like to know if that refers to carcinoma of the uterus.

I, together with the other members of the Society, feel very grateful indeed to Dr. Price for the paper he has given us this

evening.

Dr. F. Byron Robinson.—I am much pleased with Dr. Price's remarks. The first point which I would note in his remarks is that if we expect good results in abdominal surgery—no sequelæ—we must exclude the abdominal surgery done by the hundreds of untrained young surgeons who are attempting to do laparatomy. The other day, while taking lunch at a restaurant, a young physician came in and sat down opposite to me at the table. He made my acquaintance and said he had graduated three months previously. He also said he had located an office, and presented me with his new card proudly. To my astonishment he deliberately announced himself as on a determined hunt to find a laparatomy case and to do it himself. I asked him whether he had ever done laparatomy. He replied, "No." "Did you ever do a post-mortem?" He said, "No," but he had dissected his "quarter of the belly" when in college. Now, this young doctor was absolutely determined to find a case on which he would perform laparatomy. I talked with him a half-hour and tried to show him that he was unjust to himself and patient. But he replied that his teachers had taught him that laparatomy

was one of the easiest of surgical operations.

Too many laparatomies are being done to-day by men who have not the experience or the facilities to care for the patient. The result is fatality, or often what is equally bad, sequelæ of all kinds. Laparatomy to-day is a science and is based on systematic experiment, on systematic observation, and on reasoning. To obtain good results—no sequelæ—in laparatomy, a man must study under the masters: he must experiment on animals; he must carefully dissect in the dead-house; he must study the books. An unfortunate new school of laparatomists are rising. They are young men who have done no general practice, who know neither anatomy nor pathology, men who go to doing a gynecological practice and abdominal surgery right from college. They never did general surgery; they just become specialists from the day they leave a medical college. Such specialists are limited in their views, biassed in practice, and dangerous in abdominal surgery. General knowledge and practice is cheated by ignorance of common laws, and dangerous operations are done in the face of complications im-"A little knowledge is a dangerous thing." It is the little which requires the attention. Dr. Price mentions drain tubes. The subject of drainage is not yet settled. I am more and more afraid of drain tubes as my experience increases. I now always drain with pus and extensive adhesions, but in other cases I do not drain. I drain from six hours up to several days, and use an aluminum tube so it will not break in the woman's abdomen and kill her. After withdrawing the drain tube I allow a strip of gauze to remain in the cavity for six to forty hours, and then draw it out and tie the stitches. I would be absolutely afraid to dispense with drain tubes; and I prefer a drain tube to gauze, as I can control it better. I am in doubt whether hernia will follow a drain tube more frequently than no drain tube. Drainage is still a safety valve that I cannot

give up, but I use less now than two years ago.

Dr. A. Goldspohn.—If I understood Dr. Price correctly, I think the judgment he expresses in regard to operating upon appendicitis is rather too sweeping. I think it is the sentiment of the majority of good operators to be a little more conservative, especially as some very bright men, who do not work by guess but by fact, have found by examination of dead bodies, in a large number of instances, that Nature is able to take care of the appendix; that though it be dilated it is yet seared over by adhesions to such a degree as to be safe, and that it is secured against these relapses which occur very often, where it is evident that Nature has so walled in the dangerous focus that if we could see how it has been provided for we would not operate. I think operating upon the appendix has certainly been

overdone by a few individual operators.

As regards electricity, I cannot see that the introduction of a sterilized instrument, even as large as the intra-uterine positive pole, will sterilize the uterine cavity. While passing this caustic electrode over the spots that need correction, we pass the instrument up and down in the same furrows, and between these furrows ridges with septic matter remain which it is not possible to get at, so that the cauterizing will be excessive in some tracts and insufficient in others. Furthermore, if we cauterize we make an eschar, and that eschar and the serum that exudes beneath it become a culture medium for germs. Germs are in the uterus, at least in the cervix, all the time, as is well proven by recent investigations. If they are absent in the endometrium we introduce them from the cervical canal with our instrument. In cases where there is endometritis, which the later electricians would treat in this manner with so much success, there must be germs also in the endometrium, or the endometritis would probably not be there; so if we make an eschar, before that eschar is healed it becomes a suitable nidus for germs. Some of the microbes are left in the endometrium alongside of this culture medium, and how they can be innocent I fail to see. So that, scientifically considered, I do not think the positive pole can be used intra-uterine with so much innocence.

Dr. G. Frank Lydston.—There were some remarks made by the last speaker regarding the subject of appendicitis that would be very interesting if they were not quite so dangerous, and which demand comment. I am getting very tired of the continual exhibition of conditions accidentally found on the postmortem table as evidence in favor of conservatism in appendicitis. To claim as evidence in favor of conservatism that a number of cases of simple appendicitis have been proven to have existed in certain individuals, as shown by the accidental discovery of adhesions on the post-mortem table, is as reasonable as it would be to claim that it is very healthful to go into battle because a lot of fellows get away without being shot; it is about as rational as to use the accidental discovery post mortem of obsolete tubercle of the lungs, when the individual probably never knew he had tuberculosis, as an argument in favor of the healthfulness of tuberculosis. The cases cited by Dr. Goldspohn simply prove that there is such a thing as a mild type of appendicitis which produces so little disturbance that the condition is never diagnosed; but adhesions are formed nevertheless, and these adhesions and perhaps a thickened appendix are found post mortem. I would like to inquire what possible relation cases of this kind bear to the cases we meet in practice of gangrenous appendicitis producing in a very few hours peritonitis and death; or appendicitis, with or without perforation, in which a large abscess occurs about the caput coli. where the conservative surgeon, with a poultice in one hand and a hypodermic in the other, waits for the abscess to burst somewhere. That kind of surgical conservatism as applied to appendicitis would be more properly styled assassination. The man who preaches conservatism in regard to appendicitis must have a very callous conscience, if he has had any experience with those violent types of peritonitis that result secondarily from the rupture of an abscess about the caput coli. I believe that pus in the abdominal cavity, no matter what its location, should be evacuated just as soon as its presence is demonstrated. I agree perfectly with my friend Dr. Price when he says that the keynote of the situation is early and thorough surgery in cases of this kind. I presume no one will argue that cases of relapsing appendicitis should not be operated upon in the larger proportion of cases.

Dr. H. P. Newman.—A word in regard to electricity as a means of infection. We know that the uterine electrode introduced into the uterus before the current is turned on (as is done so as not to produce shock) may be the means of infecting the woman, even if the instrument is aseptic and perfectly clean, in the same manner that a clean sound may carry infection from the neighboring parts. Much more might be said in regard to this very important work that Dr. Price has outlined, but time

will not permit at this late hour.

Dr. Price, in closing the discussion, said: I think Dr. Martin scarcely understood me; it was merely an accident that I mentioned electricity. I only alluded to Dr. Martin's report of his

own work of some thirty-five abdominal sections, and he demonstrated clearly in that paper that he knew only as much about the subject as others; and I see nothing in that report to criticise. But, in justice to myself and Dr. Martin, I must say that a few years ago in Newport it was claimed that electricity would cure everything, and it gave me a great deal of pleasure in reading this report to see that he was no longer ploughing his ground with crooked sticks. I repeat that I did not intend to invite electrical discussion, and the gentleman who followed Dr. Martin made a very happy point when he stated that he and others only sent these cases to electricians that they might be convinced that there was nothing short of well-directed surgery that would serve to cure them. That is a correct statement, and to fortify it I will allude again to Dr. Martin's thirty-five recoveries: it was surgery, and surgery alone, that cured them.

Dr. Martin alluded to loose and indiscriminate abdominal surgery, and the furor over it. I have myself been called enthusiastic in teaching abdominal surgery, and I have some things

to regret.

Some other points were well taken. Beginning the study and practice of surgery in the abdomen is criminal, I hold, and I think I have ground for holding that every abdominal surgeon should have a varied experience in general surgery, as all specialists should have a varied experience in the practice of medicine. We are to have in the future a new class of specialists, unfortunately, and it pains me to see it coming. The old school of specialists will die off and we will have these mushrooms; a man who graduated yesterday, to-day will be an oculist or a laparatomist. A few days before coming West two pupils who had just graduated came to me and said: "Doctor, I would like to take your course; I want to be a laparatomist." They had never vaccinated a baby, and yet they wanted to be laparatomists! At this point I wish to refer to the early history of ovariotomy. McDowell was a surgeon with a large and varied experience; he was a pupil of John Bell, of Edinburgh, and he had evidently watched with care the work of some distinguished surgeons; he surely knew something about the work of Benham, the two successful sections done in Virginia for ectopic pregnancy in 1790. Seven years later Bantock did a deliberate section for extra-uterine pregnancy upon a slave, and she recovered. Ten years later McDowell did his first, second, and third successful laparatomies. He was born in Rock Bridge County, Virginia, and removed to Kentucky, where he commenced his work. believe he was prompted to his work by the work of his fellowstatesman, John Atlee, who was a surgeon. For a while he did operations for hernia, tracheotomy, amputations, and there was scarcely an operation in general surgery that he did not do. His first deliberate ovariotomy remains one of the most perfect sections ever done. The operation was fully explained to the pa-

tient; she was placed on the table without an anesthetic; she left the table in thirty minutes, the operation having been done almost wholly with the knife. He used a ligature on both sides, doing a double ovariotomy. He dropped the pedicle and brought a gauze drain, or his threads-I have forgotten which-out of the lower end of the incision, and she recovered nicely. He deserves gratitude for doing the first pelvic operation. So I not only claim for America the established procedure for extra-uterine pregnancy, but for the first abdominal section done for the removal of diseased ovaries. In Atlee's first case one specimen weighed sixteen ounces, the other six ounces; it was a double section for diseased ovaries. It is my impression that Dunlap's nearly four hundred sections were done without a clamp; he dropped the pedicle, and was a successful operator. I have studied McDowell, Atlec, Bantock, Thornton, and other good operators, and I rejoice exceedingly that I continue to follow them, that I have not found anything in the younger school to induce me to change my methods. I think lessening my drainage gave

me a perceptible increase in mortality.

About the Trendelenburg position. A good many operators throughout the country cling to the short incision. The Trendelenburg men want to see what is going on in there, but I hold that it is useless exposure and needless manipulation. In about seventy-five per cent of the sections done for tubal and ovarian disease you can lay out the number of ligatures you will need before you begin the operation; it is exceptional that I call for a third ligature. I boil and lay out two ligatures for the removal of advanced tubal and ovarian disease, and use two only. A short incision, about two inches, sufficiently short to compel me in many instances to remove one finger, permitting only one finger to remain under the specimen, the finger and the specimen filling the incision completely. I am not embarrassed by omentum or intestine; I rarely see them. In a number of these puriform cases, after freeing all adhesions and releasing the fundus, delivering the specimen and tying it, I sometimes slip a small sponge under the uterus, if I have perforated it or the tube is leaking, to prevent the escape of pus into the peritoneal cavity, and I tie the tube to its very roots. Let me allude to the importance of complete work. Early in the history of pelvic operations many of them were imperfectly done-for instance, leaving a half-inch or an inch of cheesy, disorganized tube, a purulent canal or sinus, or leaving ovarian stroma. Of course these patients suffer from post-operative sequelæ. I hold that in all these pus cases the tube should be removed to its root and tied, the tubal portion transfixed at the very centre, tying the tube first and later the deep cervical neck of the ovary. might allude to the Stafford knot as favoring incomplete work. The ligature slips about in the Stafford knot, while in the figureof eight knot you control half of the pedicle, then you tie the

other half, and you leave no ovarian stroma. I have repeatedly cut a diseased tube out of the uterus as I would rot out of an

apple, and stitched healthy tissue over the stump.

The question of drainage is always a puzzling one. Unless you follow a man closely in his surgery, and study his methods and motives and the character of the cases he operates upon, you can come to no very definite or fair conclusion as to the importance or value of drainage. In truth, I should have to abandon my work if I threw away drainage; I do not see how I could possibly get along without it. I drained about everything in my first 123 cases. In the first 117 I lost one case. took care of the drainage tubes myself; at that time I had very few skilful nurses, at least those who were familiar with my idiosyncrasies. Later I trained a few nurses; they slept on ironing boards and chairs and looked after the drainage tubes. I want to compare drainage with non-drainage. In the Samaritan Hospital, London, Bantock did 191 laparatomies, losing the ninety-first case. In 1891 Meredith did 112 and lost 12: he does not favor drainage. Thornton had a mortality of 11 per cent in the same period. Bantock employs drainage; Thornton condemns it, so does Meredith. Sir Spencer Wells in his last series of 100 alludes to the drainage of two and regretted those two, although I think they both got well. He finished his last two or three series with 9, 11, and 13 per cent. Compare the results of Bantock with 1 per cent with Sir Spencer Wells' 11 per cent, Thornton's 11 per cent, and Meredith's 12 per cent. But I want you to understand I do not drain everything. I would like to make this question of drainage clear, because it is being discussed. In the almost hopeless or dying cases I use gauze drainage, because there is just one chance to save the woman's life, and I want to minimize every possible risk-minimize the ether, the incision, and the operation—or, in other words, do the operation in six minutes. This was done years ago in puerperal cases with general peritonitis, enormous distention, the patient in collapse. The abdomen was opened and douched with one to three pitchers of water, and a gauze drain This was practised for some time successfully; we were not fond of it, but we knew nothing better, and we wanted to save the patient if possible, but feeling at the same time we had favored post-operative sequelæ. You have about that gauze intestinal and omental adhesions that give rise to pain, and those operations have to be completed. But if you can save the life it is perfectly safe to do the ideal operation later. The object was first to save life, then later to do ideal surgery and complete the work. Hegar read a paper at Atlanta on the open treatment of suppurative forms of peritonitis. Before he read his paper I took part in a discussion on this subject and referred to the open treatment to save life; and Hegar came to me and said I had taken all the wind out of his sails, that he might as

well not read his paper. We were working along the same

lines in total ignorance of each other.

I want to allude to appendicitis, in which I am greatly interested. Last year, in a discussion at the American Academy of Medicine, the physicians took rather advanced ground—they advocated surgery early, late, and all the time; while the surgeons rather condemned it—they wanted something conservative. Last year, at the Virginia State Medical Society, I emphasized the fact that many people were dying of appendicitis. Appendicitis is a murderous condition for which there is but one treatment, and that is not turpentine stupes, it is not poultices, but in the recent cases incision, irrigation, and drainage; and in the obstructive forms, with tympany, distention, and bowel obstruction, it is section and releasing the adhesions and dealing with the bowel as with a pus sac. In that form of appendicitis you have to draw the line as to where and when you do the opera-With obstruction I do the median section, without obstruction the lateral section, and usually it amounts simply to washing and drainage. I seek the appendix, and if it is easily found remove it; if not, I do not run the risk of fecal fistula and undue manipulation and surgery. In regard to bowel obstruction, Dr. Martin knows too much about complications above to discuss vaginal incision, or the French operation of removing all the diseased tubes and ovaries by the vaginal method, leaving the bowel adherent above in the omentum. Vaginal hysterectomy for malignancy in the absence of tubal or ovarian disease is the operation; but in the presence of advanced tubal or ovarian disease I would do the operation from above, without the risk of leaving complications, fixing the small and large bowel, and favoring obstruction and death. A short time ago Dr. Martin reported that in pus cases by the vaginal operation twenty per cent would die of bowel obstruction in five days.

Permit me again to allude to incomplete and abandoned work in the desperate cases. It is of paramount importance that all work be completed. I have now in bed a very estimable lady. One of the best operators in the South opened her abdomen and stated plainly to the physician and husband that it was malignant, and closed the incision. Five weeks afterward she came to Philadelphia. I failed to find a single symptom of malignancy except pain, but the subjective and objective symptoms pointed clearly to suppurative trouble. I opened the abdomen and released the bladder, omentum, and bowel about his incision, and then removed a huge pus sac. I washed out and drained, and she has not had a single hitch; there was a perceptible fecal odor in the tube for a couple of days. She has not had a cold skin or slow pulse, is cheerful, reads the papers and magazines. Just here I must fortify my position on drainage. I throw down the gauntlet and challenge the world. I will with any man living take the angriest possible forms of suppurative pelvie disease and remove, irrigate, and drain, and will place six or twelve of them on one side of a ward; and he may remove six or twelve cystomata, or do a section for the removal of ordinary forms of tubal or ovarian disease, and place his patients on the opposite side of the room. I will have the cleanest tongues, the slowest pulses, the least tympany and pain. My patients will be found reading Harper's and Scribner's, and his will not. I have made this demonstration repeatedly in the presence of outside physicians and nurses, and I have dozens of nurses who, if I should ask, "Will you take drainage or not?" would say, "Take drainage." My nurses all prefer drainage cases, because they are the easiest managed and make the speediest and best convalescence and recovery.

Dr. T. J. Watkins presented a specimen of

EXTRA-UTERINE PREGNANCY,

which was discussed as follows:

Dr. Joseph Price.—Some of you well know how much interested I am in this subject. There is scarcely a week that some physician does not write to me he has done a section for extrauterine pregnancy, with recovery. My experience does not agree with Mr. Tait's and a few others in this particular. Practically I know nothing about pelvic hematocele. I have done eighty-five sections for extra-uterine pregnancy, or so-called hematocele, and I always find the blood in the pelvic cavity and never in the broad ligament; it may exist, but I have never found it. Nor have I ever found the fetus in the broad ligament, and

I have removed them living and dead.

The case presented to-night is unique, because it is curious that this woman should have a flow for six weeks without a rupture. I do not think in this case there was even a delay or absent period. The course is usually inaptitude to conception, sterility for five or nine years or more, and an absent or delayed period, or the absence of two or more periods, then the peculiar agonizing pain or cramp so characteristic; the woman faints away; she has recurring, agonizing pain; she is plainly exsanguinated, it is noticed by everybody—physician, husband, and friends; and she either dies, or she lives with a rapid pulse, rapid respiration, with a boggy mass, the uterus, pushed forward and to one side and increased in size. If this continues for a few days there is a regular bleeding with débris consisting of shreds of decidua and sometimes the complete deeidua. My last case discharged perfect membranes and the complete placenta. In this case I made a terrible blunder. Two or three days before going to Milwaukee I was asked by an intelligent physician in West Philadelphia to see this woman. She had been married eight or ten years, and while hanging out clothes she fell. She missed one or two periods, the

pain recurred, and she was seen by this physician, who recognized extra-uterine pregnancy. I examined her. The history was complete: sterility for a long period, inaptitude to conception, absence of one or more periods, agonizing pain, a big mass on one side. I found in her cervix a complete placenta with membranes. I was very busy at the time, so I sent her to the hospital that evening. The next day she was quite comfortable, and as I was going away I said to my brother: "Please examine that woman, and if you think it is extra-uterine pregnancy, operate." I got home some eight days later and found what I had found in the first place. It was criminal in me, knowing what I did about the subject, to let that woman go. With an experience of eighty-four sections and eighty-one saved, I should not have permitted that woman to lie there with an aneurism to rupture and the woman to die in my own hospital.

Just here I might again fortify the importance of drainage. You will find in some of these cases an enormous amount of clot tangled up in the omentum and viscera, and it is difficult to remove it. Irrigation benefits the patient. It is curious how the pulse slows down and improves after a pitcher of water has been poured over the solar plexus. It is good for shock and hemorrhage, and my brother and I use a good deal of water in the pelvic cavity and intraperitoneally. Without free drainage we could not get rid of all intraperitoneal indigestion. It is true the peritoneum, if clean and healthy, will digest a beefsteak; but if it is damaged, red, and inflamed, that is not so. Just here I may say that free drainage is always favorable after extra uterine pregnancy operations. The tube fills up every hour and a half, and we look upon that as favorable and expect the patient to get well; with a wet tube we look for good recovery, and a dry tube alarms us.

Meeting of December 22d, 1893.

The President, Fernand Henrotin, M.D., in the Chair.

Da. G. William Reynolds presented a thesis entitled

PYOMETRA.1

Dr. Karl Sandberg.—This paper has recalled to my mind a case I had a few years ago in a woman, 57 years old, in whom I found a collection of three or four ounces of pus in a retroflexed uterus. The symptoms were pain in the lower part of the back, urinary sediment, and a slightly elevated temperature, but there was no obstruction except from the flexion. The pus was easily evacuated through a flexible catheter, and was followed by a slight hemorrhage. The treatment consisted in a

¹ See original article, p. 195.

daily intra-uterine bichloride douche. All the symptoms sub-

sided in about a week.

Dr. Franklin H. Martin.—I have been very much interested, and wish to congratulate Dr. Reynolds on his paper. While listening to the paper I was struck with the rarity of the difficulty, as far as my experience has gone, and I also realize the meagre mention of it in the literature. Several years ago I was asked by the late Dr. Scudder to operate on a case that he considered to be a hematometra in a girl about 13 years of age. The patient had had a chili and fever a few days previously. The cause of the difficulty was undoubtedly congenital atresia of the cervix. A sound was forced into the uterus and the cervix thoroughly dilated. A large quantity of bloody pus escaped. The uterus was thoroughly cleansed, and, as far as I

know, the case made a satisfactory recovery.

Dr. F. Byron Robinson.—I do not consider pyometra a rare condition. Occlusion of the uterus is of considerable interest. Occlusion of the cervix produces hydrometra, hematometra, and pyometra. If the uterine collection becomes infected the hydrometra will become pyometra.; I have seen cases of uterine accumulation in the clinics of Prof. Schröder, of Berlin. Strictures of the uterine orifice may be due to cervicitis or to the unskilful use of instruments or caustics. Cervical tumors may produce atresia. Granulations may cause atresia. Uterine atresia occurs generally before puberty or after the menopause. Before puberty it may be congenital or a sequela of one of the acute eruptive diseases. After the menopause uterine atresia may result from some inflammatory process in the cervix. It is often accompanied by muscular hypertrophy of the uterus and may simulate pregnancy. I do not think the diagnosis is difficult, for if a fluctuating tumor of the uterus is found and a sound will not pass the os the natural inference is hydrometra, hematometra, or pyometra.

Dr. F. A. Stahl.—A case of pyometra came under my notice while I was an interne at Cook County Hospital. The patient was treated by curettement for suppurative endometritis of gonorrheal origin. The patient developed acute delirium in a few hours, caused by retention of pus in the body of the uterus,

due to contraction of the cervix.

Dr. T. J. Watkins.—I agree entirely with Dr. Robinson with reference to the diagnosis. With a soft tumor in the site of the uterus, and a closed canal, the only feasible thing to do is to open the canal, if possible, otherwise to puncture the tumor and see if anything is contained in it. I have a unique case of pyometra to place on record. I was asked to come prepared to open a pelvic abscess. The patient had been confined previously by a midwife. About the end of the first week she had rise of temperature and all the symptoms of puerperal infection; a physician was called in and he treated her for one week,

using vaginal and intra-uterine douches. Upon examination a tumor was found to the right of the usual site of, and apparently within, the uterus. An anesthetic was given, the cervix dilated, and the uterus washed out; very little pus was obtained, but upon carrying the irrigator up into the right horn of the uterus fully one pint of very offensive pus escaped. There was no appreciable force used in getting into this cavity. It seemed to me that it was probably a pregnancy in the horn of the uterus. The original cavity was fully three to four inches deep, but on passing the irrigator to the right horn of the uterus it extended two or three inches further. The cavity, after being washed out, was thoroughly swabbed with carbolic acid, a light packing of iodoform gauze placed in the uterus, and the vagina packed with gauze, which was to be changed every twenty-four hours and the packing of the uterus gradually removed; but in case the temperature did not subside the packing of the uterus was to be removed at once. The temperature did not go down very much, and the packing of the uterus was removed. The septicemia persisted for a long time, but the patient ultimately recovered. Gauze drainage alone is not always sufficient in cases of pyometra. If rubber drainage had been used, alone or in conjunction with the gauze, the woman would probably have made a rapid recovery. It has been said that the uterus is a natural drainage tube. You will probably agree with me that this statement is not always true. Whenever pus exists in the uterus the cervix should be kept dilated; and if good uterine drainage does not obtain, gauze or rubber tubing should be employed.

Dr. Henry Parker Newman.—Like Dr. Robinson, I am not sure that this condition is so rare as the paper indicates. Very frequent notices of it occur in foreign literature, and nearly all the text books treat of pyo-, hemato-, hydro-, and physometra. Two cases have come under my observation at the West Side Free Dispensary within the last year. One is of particular interest. The tumor is possibly as large as the one reported by Dr. Reynolds. The case was reported to me by Dr. Corbett and is still under observation. As soon as the tumor attains any considerable size, a profuse purulent discharge occurs and the uterus regains its normal size. She has passed the menopause, and the case is undoubtedly one of senile adhesive cervicitis. There have been no distressing or urgent symptoms at any time. She goes about; comes to the clinic when she is afflicted with the presence of a large tumor, and at no other time. It resembles somewhat those occasional cases of pyosalpingitis in which evacuation of the tubal contents occurs

through the uterus.

The other case is that of a woman, past the menopause, who had a distended uterns filled with a muco-purulent accumulation—a pyometra. Evacuation by operative procedure resulted in a cure. Two cases within so short a period of time indicate

that pyometra is not quite so rare as some of the speakers think. I do not appreciate the difficulty of diagnosis. As Dr. Robinson has said, if we find the uterns filled with fluid, it is the first duty of the physician to ascertain what it is, and this is, as a rule, an easy matter to determine. A large percentage of women who have passed the change of life have closure of the cervical canal, and if fluids collect in the uterus, pyometra, hematometra, or

hydrometra must result.

Dr. Reynolds, in closing the discussion, said: If pyometra is not a very rare disease, as two of the gentlemen would have us believe, how can they account for the lack of gynecological literature upon the subject? If it is a common disease, why have the great writers of the Old World only mentioned it, and why have our American writers not even alluded to the disease? The diagnosis in this case was difficult, as is evident from the variety of diagnoses made by several prominent surgeons. The history of the case does not help much in making a diagnosis.

I thank the gentlemen for their interest and courteous and

able discussion of the paper.

Dr. Karl Sandberg read an essay on

SYMPHYSIOTOMY.1

Dr. T. J. Watkins.—Dr. Sandberg's paper shows careful study of symphysiotomy. He has presented the subject in a forcible and lucid manner. I have recently had occasion to perform symphysiotomy in my service at Cook County Hospital. The open method of operation was employed. The symphysis was oblique from right to left from above downward, and was completely ossified. After severing the soft tissues anteriorly, the pubic bones were separated with ease and rapidity by means of a small chisel and mallet. The hemorrhage was slight. It seems to me that in all cases of symphysiotomy the chisel and mallet are preferable to the falcetta, the bistoury, or the saw,

1. A shorter incision is required.

2. Detachment of the pyramidal muscles is unnecessary.

3. Hemorrhage is slight.

4. Separation and incision of the soft tissues on the inner surface of the pubes is avoided.

5. Danger of injury to the bladder and urethra is absolutely

removed.

6. Liability to infection is less, since the incision need not extend so far down, and lacerations from the passage of the child's head are less apt to extend into the wound of operation.

I am unable to appreciate the particular advantages claimed

for the subcutaneous as compared with the open method. After division of the symphysis the descent of the fetal head pro-

¹ See original article, p. 158.

duces rotation of the sacro-iliac joints, which probably increases the pelvic diameters as much as, or more than, the pubic separation which occurs. This explains the unsatisfactory results of pubiotomy on the cadaver. The descent, through the divided pelvis, of a fetal head whose diameters are much greater than those of the pelvis, must produce extensive lacerations of the connective tissue of the anterior vaginal wall, with resultant urethrocele, cystocele, and uterine displacement. Tears into the urethra and bladder would seem to be due, not to stretching, but rather to their engagement between the fetal head and the sharp angles of the divided pubic bones. The more recent writers upon this subject do not regard the danger of non-union of the pubic bones as materially important, and it would seem that the conditions for union would be as favorable in such cases as in any compound fracture.

The indications for the operation should include the diameters of the pelvis, the size of the child's head, the degree of ossification of the cranial bones, the age of the mother and history of previous deliveries. "Cranial ossification and the compressibility of the head diminish progressively with the age of the

mother."

Dr. F. A. Stahl.—The indications for symphysiotomy are never the indications for craniotomy. Unless the child is dead craniotomy should never be performed, while symphysiotomy should never be performed unless the child is alive. In view of the traumatism and the permanent disabilities consequent upon symphysiotomy, and in view of the other methods we can use to overcome the same conditions, I doubt if we are justified in resorting to symphysiotomy. I see no reason why perfect reparation and recovery of function should be so much more rapid in the case of this joint than occurs in similar lesions of other joints. I regard this operation very much in the light of the tidal waves we have had in medical science during the past year or two, such as Koch's lymph and Pasteur's treatment for hydrophobia. I believe that ten or fifteen years from now symphysiotomy will have reclined into the oblivion in which it existed ten or fifteen years ago.

Dr. F. Byron Robinson.—Dr. Stahl's remark that symphysiotomy will in fifteen years be back where it was fifteen years ago I do not think will hold good. I have practised symphysiotomy on the cadaver a number of times and was unfavorably impressed, but since performing the operation on the living subject I am convinced that it is a legitimate obstetrical procedure. I operated by the open method, using the index finger as a director, and cut with a long, straight, probe-pointed knife from behind forward and downward. The pubic bones separated easily until the ligamentum arcuatum was reached. Profuse venous hemorrhage occurred, which was controlled by tamponing. On complete division of the pubic symphysis the

bones separated more than two inches. The child's head engaged readily and was easily extracted by forceps. The condition of the child was good. It was difficult to keep the bladder from protruding into the wound, and the bones would not remain in contact. The vagina was torn by the separation and the wound became infected. The pubic bones were held in contact by bandages. I think the pubic bones should be sutured with wire. I prefer the open method of operation, as I can see what I am doing. I think symphysiotomy is a useful operation and that it has come to stay. I hope I shall never again do crani-otomy on a living child. Symphysiotomy is destined to save many children. But I would urge that the technique of the operation should be learned on the cadaver. I fear that symphysiotomy, in the so-called progressive operative craze, will be abused. Before doing the operation, careful pelvic measurements should be made. And yet mathematics in the pelvis alone will not be sufficient. The size of the fetal head must also be taken into consideration. By judicious selection of cases. symphysiotomy will fill a very useful rôle in obstetrical surgery.

DR. HENRY PARKER NEWMAN.—I would like to report a case which has recently occurred in my practice. The mother was 29 years old, five feet six inches in height, and weighed one hundred and eighty-five pounds. This was her second pregnancy. The first, some six years previous to this, had resulted in a severe and protracted labor, and permanent injury to the genital tract from the use of instruments. She had then been attended by a prominent and skilful accoucheur, and I believe that the extreme mutilation sustained was unavoidable

according to the methods then in vogue.

About four years ago the patient came to me for repair of the principal injury, an immense tear dividing the cervix entirely through to the cervico-uterine junction, in consequence of which

her general condition was greatly impaired.

On May 3d, 1893, I was called to her, and was told that she had been in labor ten days (there had probably been uterine contractions during that length of time). The patient was much exhausted from the prolonged and futile pains of the twelve hours before I saw her, and the broken rest of the preceding ten days. She had a generally contracted pelvis with a conjugate diameter of nine centimetres. The fetal head was large. The presentation was occipito-posterior, and atresia of the cervix, uterine inertia, etc., existed. The complete occlusion of the cervix was explained by the fact that pregnancy had followed the operation for restoration almost immediately, and had been complicated in the early months with erosions incident to cervical endometritis. I incised the cervix and dilated sufficiently to introduce two or three fingers, but retraction was very imperfect. The measurements of the pelvis and child's head were as follows:

				Centimetres.
Between iliac crests.				25
Symphysis pubis and upper spinous process of sacrum 18				
Conjugate diameter	(at b	rim)		9
			ad	
Occipito-frontal	6.6	6.6		13
Biparietal	6 6	6.6		10
Bitemporal	6.6	4.6		9
Trachelo-bregmatic	6.6	6.6		10
Fronto-mental	66	6.6	* * * * * * * * * * * * * * * * * * * *	10

My assistants were Drs. J. L. McCullom and F. S. Cheney. Taking into consideration the existing conditions, with the head at the brim in the occipito-posterior presentation, and the history of the previous confinement, we discussed the following alternatives: (1) to use the axis-traction forceps, as had been done in the previous confinement, and run the risk of still more extensive injury than formerly; (2) to turn and deliver, with the danger of fixation of the after-coming head and loss of the child; and (3) symphysiotomy. The latter, which I still think

was the best procedure, was decided upon.

The patient was prepared, anesthetized, pubes shaved, and with an ordinary scalpel an incision two inches long was made through the skin and superficial fat directly down upon the pubic joint. Continuing the incision through the cartilage, a separation of about an inch was gained, and, after the posterior pubic ligament had been divided, another full inch of separation was obtained. This was particularly marked when the head was being extracted through the superior strait, which was easily accomplished by means of forceps. There was neither laceration of the parts nor injury to the bladder.

A gauze drain was used in the lower angle of the wound, the upper part being united by deep silkworm-gut sutures. The

bones were not sutured.

The child, a female weighing twelve pounds, was not injured in any way, and the mother made a most comfortable and satisfactory recovery. A bandage of strong cotton cloth around the hips, reaching to the thorax, was worn for two weeks, and the patient was kept strictly in the recumbent position. At the end of four weeks she was moved to the sofa, and in six weeks was allowed to go about the house. At this time there was slight movement to be detected at the symphysis by digital examination; the woman herself felt nothing unusual in walking. I repaired the slight cut which I made in the cervix, and the patient is now enjoying the best of health.

From my own experience I am confident that symphysiotomy is an operation of the utmost value in many of the emergencies arising in the lying-in chamber, and that it will soon assume a definite rank in obstetrical operations as one of the safest and most conservative at our command. Its use is not to be determined by any autocratic standard of measurements of head or pel-

vis, but by the judgment of the operator, who has the safety of the child and the present and future welfare of the mother at heart.

Dr. Karl Sandberg, in closing the discussion, said: In regard to the criticism against Morisani for having performed so many operations in a short space of time: his report of fifty-five cases is simply a collection from Italian, French, and German operators; probably not more than twenty per cent belonged to Morisani himself. Dr. Stahl proposes that the pubic bone should be resected instead of the cartilage, because it would give a better union. That has been proposed by others, but the results from division of the cartilage have been so successful that there has been no reason for changing the method. was stated that there could be no parallelism between craniotomy and symphysiotomy, as craniotomy was never performed on the living child. In the first place, I believe it is not infrequently performed on the living child; and in the second place, where the child is dead its death has generally occurred while the obstetrician has been waiting for delivery to take place, or has been caused directly by the obstetrician's attempt at delivery. The question before us is, How many of these children who under the present methods are allowed to die can be saved by

symphysiotomy?

As to the criticism that this operation is a fad which will run its course and die out, of course that is a question that only time can settle; but it is a fact that several obstetricians who are to-day the strongest advocates of symphysiotomy, some years ago were its strongest opponents. Dr. Robinson's experiments on the dead have been done many times before, but it has always been observed that the results of experiments on the cadaver are not to be compared with operations on the living. Dr. Robinson and Dr. Newman declare that they will never do the subcutaneous operation, as they think the open operation difficult enough. In answer to that I will simply say that the man who took up the operation again after it had been condemned by the whole medical profession, introduced the subcutaneous operation and has been very successful with it. Furthermore, both Dr. Newman and Dr. Robinson had very severe hemorrhages in their cases, and that is what all operators have observed; with the open method the hemorrhage is considerably greater than with the cutaneous method. As far as I understand Dr. Robinson, his operation was something between the open and the subcutaneous methods. Another objection to the open method is that it is very difficult to keep the wound aseptic; it is continually bathed by the lochial discharge and the urine. And it is a fact that a great percentage of the cases operated upon by the open method suffer from sepsis. Out of Zweifel's fourteen cases only three did not develop fever. Dr. Robinson said it was impossible to get the finger behind the symphysis pubis. I think the

operation should be performed at the stage of labor when it is possible to get the finger down. It should not be left until all other means are tried, and then symphysiotomy resorted to when nothing else can be done. I believe that midwifery, as practised in this city and many other places to-day, deserves a great deal of criticism. But much of this could be avoided if the obstetrician would always make it a rule, when taking charge of a case, to measure the pelvis externally and internally, and then decide upon his line of treatment for each case. Now, frequently, the obstetrician' goes to the case, and sits down and watches as long as everything is all right, and if anything is wrong he makes his measurements afterward or not at all. Dr. Jaggard stated that the operation could not be rejected and could not be generally adopted; could only be done in hospitals. That is the stand that numerous German obstetricians have taken; but, on the other hand, there are others—for instance, Zweifel—who advocate its adoption by the general practitioner, and it is a question that it is difficult to decide at such an early stage of the operation. Dr. Jaggard also said that, as a rule, when the conjugate is between $6\frac{1}{2}$ and $8\frac{1}{2}$ centimetres, when the child is living and the woman infected, forceps should be tried carefully, and, if not successful, symphysiotomy should be performed; but if the woman is aseptic, Cesarean section should be performed. If this should be laid down as a rule there would be very little room for symphysiotomy. Eustache, on the other hand, thinks symphysiotomy should not be performed if the woman is infected. The mortality certainly has been quite high in the hands of some operators, but I believe this is principally due to the open method of operating with its liability to infection. The final results, however, as to the woman's health seem to have been very satisfactory. In Morisani's fifty-five cases it appears that only nine per cent suffered from vesico-vaginal fistula, and, indeed, that seems to have been the only kind of permanent injury. In regard to the relative value of the life of the child and the mother, that, of course, is something which cannot be stated in any tabulated form. It will always be a matter of individual judgment in each individual case. Dr. Jaggard states that maternal mortality in craniotomy, if properly performed, is zero. That may be so. I have no doubt there are many operators who have performed craniotomy without fatal results to the mother, but there are many others who have performed craniotomy with numerous fatal results; and I think the percentage I gave as to the mortality is correct, because it is collected from a number of different operators. Dr. Newman objects to catgut for bony union as useless. I have no great personal experience with catgut, but Zweifel has used silver wire and gave it up as undesirable. He thought that it irritated the urethra and caused incontinence of urine, and substituted catgut, with which he seems well satisfied.

TRANSACTIONS OF THE WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY.

Stated Meeting, May 20th, 1892. The President, W. W. Johnston, M.D., in the Chair.

Dr. George Byrd Harrison read a paper entitled

POINTS IN THE ETIOLOGY AND TREATMENT OF INFANTILE ECZEMA.1

Dr. S. S. Adams, in opening the discussion, said he agreed with Dr. Harrison that each case stood alone. Eczenia was an inflammatory, non-contagious disease of the skin. The causes were not thoroughly understood; they were diathetic and dietetic. But the disease was chiefly due to local causes—as, in the careless handling of the infant, irritants were brought in contact with its surfaces; sudden changes of temperature, and the very unhygienic habit, even among intelligent people, of not removing the soiled napkins except at stated times; also failure to remove all dirt from the scalp; and, in bottle-fed infants, allowing the milk to run over the cheeks and face, thus encouraging filth. It occurs at all seasons and among all conditions.

The treatment depended more upon the variety than upon the cause. Of course when the cause was found it must be removed. Crusta lactea was not due to dentition, as supposed by some, nor did he believe there was any danger of the disease "going to the brain" if cured on the surface. The treatment should be general and local; more, however, depended upon the latter. The most important indication was to allay the itching. If you failed in that, you would fail to cure the disease. A mask should be applied to the face and the child restrained in the manner recommended by White, of Boston. This method was to take a pillow case and cut an opening for the head, and, having put it on the child, have it stitched down so that the child could not use its hands. The child soon realized the condition of things and remained quiet. Every scab must be removed before any medicaments were applied. He would under no circumstances use soap for the purpose, but relied upon poultices and emollient applications. In opening any vesicles he carefully protected the surfaces from the evacuated serum. He was opposed to the use of starch and powders for new-born infants. They should be kept clean by bathing and thorough drying.

¹ See original article, p. 186.

In eczema, however, calamine powder and chalk or aristol were sometimes beneficial. In the crustaceous forms he used the white precipitate ointment, with a little carbolic acid to allay the itching. As to internal remedies, he used such as tended to improve nutrition. He did not believe in specific treatment

except for the syphilitic form.

Dr. S. C. Buser said he had always protested against the popular belief that the cure of crusta lactea was detrimental to the health of the patient. For many years past he had followed the practice of Niemeyer, usually preceding the application of the white precipitate ointment by a thorough cleansing of the affected part with tar soap. He had also employed the oil of cade with success. The alimentation and nutrition of the child demanded the strictest attention.

In the treatment of intertrigo cleanliness and dryness were essential, and could be best accomplished by prompt removal of soiled napkins, washing and drying the parts, dusting the surface with bismuth subnitrate, and the application of a layer

of absorbent cotton.

He could not define the influence of dentition in the development of eczematous eruptions, but cases occurred in which with the successive appearance of each group of teeth the eruptions

would reappear.

THE PRESIDENT (DR. W. W. Johnston) said he was sorry that more had not been said about the anatomical condition. Eczema was a sort of catarrh of the skin, the chronic hyperemia of the derm resulting in a moist condition of the surfaces; and, again, there was an exfoliation of dry, bran-like scales. Catarrhs bear a close relationship to constitutional conditions, as was well marked in gastro-intestinal catarrh. Fat children have dry and harsh skins; they are hard to cure. These conditions have the closest relation to the gastro-intestinal canal. It is therefore necessary to improve nutrition and bring about change in the mucous membrane. In diarrhea and thrush associated with erythema about the nates it was necessary to cure the diarrhea before the erythema would get well, showing the close relation of the diseases. Cleanliness was of the first importance. He had used a lotion of boracic acid and carbolic acid in glycerin and rose water with most satisfactory results. Head eczema was the most troublesome of all; it is the hardest to cure. You might use all known remedies, yet it persisted. In relation to the healing of these cases producing any bad effects, he related a case in which eczema suddenly disappeared, after which the child rapidly emaciated. There was a danger in removing the crusts from the face and head. He had a case in which he suspected syphilis, but it was denied. He directed the application of a starch mask for the removal of the crusts: hemorrhage followed, and the child died. Every case must be treated experimentally.

Dr. G. W. Acker said he had cured a case of chronic eczema of the scalp and thought he had done something brilliant. The child soon afterward died of typhoid fever, and he lost the family. as they thought curing the eczema caused the death of the child. In the treatment of intertrigo glycerol of zine had given most satisfactory results. Nitrate of silver solution, five grains to the ounce, was a good application. He believed that dusting the surfaces of new-born babies with talcum powder was good practice; at any rate, he had never seen any evil result from its use.

Dr. S. S. Adams said his objections to powders for the skin were that they made the skin abnormally dry and cocluded the pores. He said that bathing with a solution of soda accomplished what Dr. Busey did with soap. He himself used medi-

cated soaps.

Dr. G. B. Harrison, in closing the discussion, said that, as to the anatomical points, he did not think any doubt existed among dermatologists as to the exudation of serum at some time during the disease, though it might sometimes be overlooked. Dr. Busey had referred to the disease as occurring in babies fed upon condensed milk. He had on hand then a similar case. He thought the dietetic treatment of greatest importance in that case. Locally he used the unquentum hydrargyri ammoniati with carbolic acid. He did not remove scabs at once with poultices, but softened them first with oil. Dr. Adams had spoken of the difficulty of curing the erythematous form, and said he did not think any benefit was derived from constitutional treatment. He (Dr. Harrison) had used arsenic in these cases with benefit. Latterly he had used the plaster mulls, recommended to him by Dr. J. C. McGuire, with great satisfaction. They constituted an elegant method of medication, the mulls being applied in strips and secured by rubber plaster.

Stated Meeting, June 17th, 1892.

The President, W. W. Johnston, M.D., in the Chair.

Drs. H. B. Deale and S. S. Adams read a joint paper on

NEURASTHENIA IN YOUNG WOMEN.

Dr. W. W. Johnston said the subject was one in which all physicians were interested. The symptoms as had been detailed were frequently met with. There was such a disease as defined by Dr. Deale, though some deny its existence. As to the etiology of the disease, it was one of civilization, occurring in city life, especially among those who lived luxurious lives. In such people there was a tendency to deterioration, with impaired nutrition and loss of nerve force. The children of such persons

¹ See original article, p. 190.

had a tendency to serious disease. They had no power of resistance. Young women who were overtaxed in their work or pleasure were very subject to the disease. Some endured much, while others broke down sooner.

The symptoms were numerous and presented many phases. There was loss of nerve tone. All the functions were below par. Early waking, as mentioned by Dr. Adams, was a very curious circumstance. Why a patient should always wake up at just 4 o'clock in the morning was unaccountable. Innutrition occurred in all those cases. Food was not assimilated, and there was a condition of mucous catarrh of the colon; and the passage of mucus from the bowels was a symptom of neurasthenia. There was a condition of nervous fright; in crossing the street there was sometimes great apprehension from passing vehicles, and terror in the presence of a crowd. He related the case of an overworked stenographer who was afraid to go home, who recovered after a period of absolute rest. There was anemia,

catarrh, and constipation all associated together.

As to diagnosis, it would not do in all cases of women who complained of loss of tone to call it neurasthenia. Each case should be carefully examined and all the organs inquired into. He mentioned a case that occurred in the practice of the late Dr. Stanton. She had also been treated at a sanitarium. He accepted the diagnosis of neurasthenia and directed the treatment accordingly, but there was no improvement. The patient complained of some difficulty in defecation, and an examination revealed the presence of cancer of the uterus. He referred to a case which had been treated for debility; the urine was examined, but presented no abnormal conditions. Later developments proved it to be a case of cirrhotic kidney. In all cases of neurasthenia the urine should be frequently examined. There should be no difficulty in differentiating between hysteria and neurasthenia, as the symptoms of the former were characteristic. Neurasthenia might, however, cause hysterical manifestations, and hysteria might develop as neurasthenia. treat these cases by rest and diet, or by exercise alone? He believed the best results would be obtained by rest and diet. the case of a school girl suffering from severe ocular defects which caused muscular strain and produced neurasthenia, some improvement occurred after the use of correction glasses; but they did not effect a cure. The girl was taken from school in a much debilitated condition. He began the treatment by enjoining absolute rest and careful regulation of diet. The father thought gymnastics and horseback riding would be preferable. He, however, induced them to try rest in bed, which should continue for a month. She was put to bed and directions given for her being well fed. Galvanism was applied as a means of occupying her attention. At the end of two weeks there was no perceptible improvement and the patient and her parents were

wearying of the treatment. He persisted in carrying out the plan marked out, and at the expiration of the next two weeks she had developed an enormous appetite and was much improved.

These patients should be kept in a passive condition, lying down much while in-doors, and should drive in an easy-going carriage if allowed to go out during the day. Some patients were much benefited by total seclusion and cutting off all outside influences, as of papers, letters, and friends, and perseverance in absolute rest. Travel was most injurious, and was especially exhausting when undertaken with a view of sightseeing, as that increased mental strain as well as bodily fatigue. Change of climate did good, and it should be obtained in the least fatiguing manner. Mountain climate was the most beneficial, and that of the Adirondacks was preferable. Massage did much good and afforded all the exercise necessary. Drugs did no good. No one could say that arsenic or iron did any good. Other means without them did all the good.

Diet was of greatest importance. The patient should be overfed, according to the recommendation of Weir Mitchell. Stimulate digestion by giving food with aids to digestion. should eat plenty of meat—beef three times a day—but vegetables should be limited to one at a time.

TRANSACTIONS OF THE NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, December 18th, 1893.

The President, Samuel B. W. McLeod, M.D., in the Chair.

THE CHIEF FACTORS IN THE PRODUCTION OF THE DISEASES PECULIAR TO WOMEN.

Dr. T. Gaillard Thomas was to have read a paper on this subject, but, being unable to be present, he sent it to be read by his associate, Dr. Carmalt. First he expressed sympathy with the objects of the Society, and admiration for its persistence in

carrying out those objects.

Regarding the subject matter of his paper, he had only to offer old wine in new bottles. The topic, the immediate causation of the diseases peculiar to women, would prove of even greater interest to physicians of experience than to younger men. Although morbid conditions may develop in the genital organs at any time during life, they are more apt, he said, to begin at one of four great climaeterics; these are puberty, marriage, childbirth, and the menopause. About eight-tenths of the diseases peculiar to women begin at one of these epochs.

Puberty is marked by progressive metamorphosis of the ovaries and resulting ovulation and menstruation; the menopause by retrograde metamorphosis of the same organs and functions. Marriage and childbirth were also attended by changes most im-

portant for the health of the wife and mother.

It is the ovaries which mark by their rise to and fall from power the beginning and ending of woman's functional career. It is true that with ovarian advance and retrogression a simultaneous change occurs in the uterus, but no one will to-day dispute the fact that the first constitutes the cause, the second the result; that the change in the first is the phenomenon, while that in the second is the epiphenomenon. From birth to the thirteenth year the girl is being prepared by Nature to meet the first great climacteric of life. Fortunate for her if ignorance of guardians or untoward circumstances do not interfere with development and defeat Nature's kind purpose. If during this period all went well, the first climacteric, that ushering in menstruction, would be normal, unattended by pain and other ills so common at this period. But if from any cause the growing uterus has been checked in its development, if it has acquired the shape of a gourd, if the ovaries are not wholly developed, or if the tubes are constricted, then a variety of so-called diseases will arise, many of which are incurable. Some of those mentioned were painful menstruation, hystero-epilepsy, even genuine epilepsy, and other conditions which held out for the woman a life of invalidism or a tedious and perhaps discouraging course of treatment. Symptoms arising at this period were due to the fact that a call was made upon organs insufficiently developed, and, as they were not equal to the demand, a long list of ailments developed as a consequence. By the patient's friends, and even by her physician if he were a superficial man, the trouble would be attributed to taking cold and be accounted of but passing duration. The wiser physician, however, recognizing the serious import of the trouble, would carry out such local treatment as might be indicated and prescribe a course of calisthenics, galvanism, and such measures as would favor further development. But there are some troubles arising at puberty which project themselves into the future life of the patient. Among these he had already mentioned deformity of the uterus and constriction of the tubes, which might give rise to sterility, to ectopic pregnancy, to salpingitis. All those who watched over the career of the young girl, mother, physician, and teacher, should join hands to make her as perfect as possible for taking on her new functions at the first climacteric.

The first climacteric having been passed, the girl was ushered into the period of young-womanhood, which covered seven years, extending from the thirteenth to the twentieth. Although during this time faulty dress, exposure to cold, excessive muscular effort, and other violations of the health laws might

induce disease, yet usually this was a cycle of health and happiness. Then comes a second climaeteric, which sometimes proves most baneful to even robust women who enter upon it—mar-

riage.

There are three morbid states which now frequently show themselves: (1) vaginismus; (2) specific vaginitis, endometritis, and salpingitis; (3) the manifold evils resulting from abortion in women who resort to this criminal practice for one reason or another. As to the first, vaginismus, it is well understood and is easily remedied. As to the second, Dr. Thomas referred to an address which he had recently published upon the subject. It was only twenty years since specific urethritis in the male was regarded as an affection of most trivial import. Dr. Noeggerath then published his renowned dissertation which entitled him to be classed among the benefactors of mankind. The statements therein made had since been confirmed—that often young men prior to marriage had specific urethritis; that this affection very generally caused more or less urethral stricture and a low grade of urethritis which continued for years; that it may be transmitted to the wife, in whom it may extend from the vagina and urethra to the higher channels and cause endometritis, salpingitis, ovaritis, and inflammation of surrounding structures. Although these views first expressed by Noeggerath had been violently assailed, they had since been weighed in the balance and found valid.

It has come to be admitted that specific vaginitis, transmitted to women by men who are often utterly ignorant of the effects, is the cause of most direful pelvic troubles met with by gynecologists at every turn. Often the conditions to which it gives rise are of an incurable nature, except through the dangerous procedure of celiotomy. Dr. Thomas would here insist upon physicians instructing men early in life of the dangers of gonorrhea, although it may have been contracted some time before contemplated marriage. It had been the custom of physicians, when consulted by young men with regard to the safety of entering upon matrimony, to ask a few questions, to make a casual examination, and, if they found the outside of the platter clean, to give their consent to the union. And the result had often been most direful. Few men would run the risk of precipitancy in so important a matter as marriage if they only knew the dangers in a latent urethritis or in the slightest chronic discharge.

The third climaeteric. Let us suppose the girl has passed through puberty, is well developed, and has become a wife; the probabilities are that within a year or two she will be called upon to face another climaeteric, that of childbearing. The passage of the fetus is attended, even in labors apparently normal, by certain traumatisms which have a most disproportionate bearing upon the health of the woman suffering from them.

The reasons for this are not far to seek. A split of the cervix uteri, which in the non-pregnant woman would readily heal and give rise to no further symptoms, might, if it occurred during labor, lead to results most baneful to the future of the patient. In summing up this portion of his subject, Dr. Thomas said there can be no doubt of the fact that a large proportion of the diseases peculiar to women are due to injuries inflicted during the puerperal condition. Some of these diseases are endometritis, menorrhagia, metrorrhagia, displacements of the uterus, prolapsus of the bladder, rectum, and vagina, cystitis, secondary changes in the blood and nervous system which reacted upon all the organs of the body. It should be a universal rule, therefore, to examine for injuries after every labor, and to repair them, in order that thereby the diseases peculiar to women may be

further greatly reduced.

The fourth climacteric. We come now to the menopause, or change of life. When the far-reaching nervous influence exerted by ovulation upon the system of woman during thirty-five years of her life is borne in mind, one must expect decided psychical and physical results from its sudden cessation. Still, many pathological conditions have been attributed to the change taking place at this period which have had no connection with it The swing of the pendulum with regard to this matter must be carefully supervised, in order not to overestimate nor underestimate the influence of the menopause in the production of disease or of symptoms. He thought the chief significance of the change of life to the gynecologist existed in the fact that it constituted a haven of rest to menstruating woman. Ordinarily it puts an end to subinvolution, to uterine hyperplasia, to metrorrhagia and menstrual irregularities, and to the growth of uterine myomata. With so much certainty can such results be depended upon that operations may be reserved with the hope that the climacteric, if it is soon to take place, will bring relief. Senile or atrophic changes coming on rapidly may, however, give rise to certain troubles at this period of woman's life.

Dr. George T. Harrison was called upon to open the discussion. Not having heard that portion of the paper which referred to gonorrhea as an etiological factor, he laid particular stress upon the baneful influence of this disease. Noeggerath had not only pointed out its far-reaching consequences, but had also predicted that it would be found to be due to a particular micrococcus, which afterward was discovered by Neisser in the gonococcus. Syphilis, Dr. Harrison thought, was an innocent disease in the female compared with gonorrhea. An attractive young lady of 19 years was recently married to a widower of 35 or 40. Soon after marriage she began to complain of backache, pelvic pain, and prolonged menstruation. At first she was confined to her bed for only a day or two at a time, but things went from bad to worse, and at last she was

taken with such violent fever that she had to remain in bed. Dr. Harrison saw her at this time, suspected the nature of her trouble, made physical examination, found endometritis, salpingitis, and ovaritis with some exudation. He put her on treatment. She began to improve, but one day called his attention to the fact that one of her eyes had become inflamed since his previous visit. An ophthalmologist confirmed the diagnosis of gonorrheal ophthalmia, and in spite of every effort that eye was lost, and they could only be thankful that the other was This, he said, was only one of the fruits which might spring from gonorrheal infection; and although the eye trouble was accidental, yet we were constantly meeting with cases where the same inflammation had blighted hopes for offspring and en-

tailed much suffering.

Dr. H. J. Boldt mentioned, as among the causes of disease in women, faulty dress and hygiene. The unusually high heels formerly worn more than at present by women had a great deal to do with pelvic disease by throwing the pelvis into an abnormal position. While gonorrhea played an important part, yet he believed it had been exaggerated by some, at least in one way-namely, that more pelvic diseases were ascribed to gonorrhea, compared with other etiological factors, than really owed their origin to that disease. The puerperal state, including abortion, was a more frequent cause. Another important factor in etiology was uncalled-for gynecological interference. The use of the pessary where it was not required was not an uncom mon source of pelvic inflammation; so also with regard to the introduction of unclean sounds, dilators, and other instruments. It was difficult to say in many cases whether the pelvic condition dated from a gonorrhea or puerperal infection, but the former cause could be surmised where sterility had existed since marriage. In all cases, however, the husband should be examined when the wife came for treatment because of sterility.

Dr. A. H. Goelet said that a factor in the production of uterine disease which was frequently overlooked was a neglected dysmenorrhea existing prior to marriage. He had also frequently observed in unmarried women the association of fibroid tumors with hysteria and dysmenorrhea. He had observed this so commonly that he had made it a rule, when a woman with fibroids consulted him, to inquire whether she had not suffered in early life from dysmenorrhea, and the answer had been uniformly in the affirmative. Dr. Goelet further called attention to a neglected condition of the bowels as a frequent cause of uterine disease; also to imprudences, especially during menstruction, and to occupations and wearing apparel producing

obliquity of the pelvis.

DR. Tull said he thought the growth of the child had not by any means all to do with diseases of the pelvic organs in later life. During the last two years he had seen three cases of

absence, or almost complete absence, of the uterus and ovaries in well-developed, healthy women, and also cases of suffering in women who had had every opportunity for development, whose pelvic organs were well formed, and who had not been contined. Scarlet fever or other acute disease at or awhile before puberty was sometimes the cause of imperfect growth. As to syphilis, he had seen several cases of ovaritis due to that alone, in one a gumma of the ovary having been found. He believed gonorrhea was probably the most potent factor, and it was hard to prove the opposite because so few husbands had not had this disease. Lack of cleanliness in unmarried as well as in married women was, according to his observation, a frequent cause of moderate fever and septic symptoms which disappeared with the use of the vaginal douche.

At this point the question of vaginal douches after ordinary labor came up, and it was strongly opposed by Dr. Harrison. Dr. Boldt agreed with Dr. Harrison's remarks. Dr. R. A. Murray spoke of the practice in the Maternity as applied by himself and the other physicians, and said that out of nine hundred and fifty-seven continements from 1890 to 1893 they had had but one case of sepsis. The President also made a few remarks, especially with regard to the advance which had been made in the prevention of puerperal fever, which could be regarded as evidence of the interest taken by the profession in

the welfare of the gentler sex.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Meeting of November 4th, 1893.

The President, E. G. HERMAN, M.D., in the Chair.

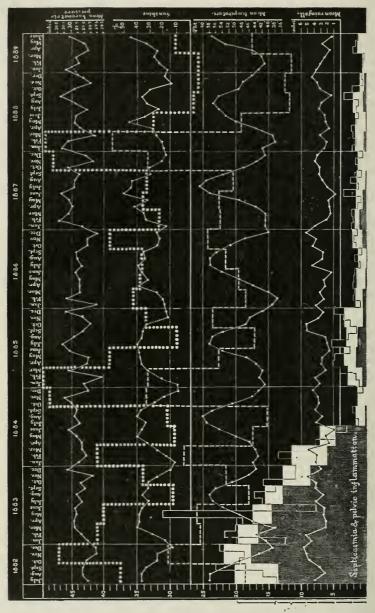
A paper by Dr. Boxall on

THE RELATION OF EXTERNAL METEOROLOGICAL CONDITIONS TO THE INCIDENCE OF FEBRILE ILLNESS IN CHILDBED

was read. The author discussed the relation under two heads—mortality, morbidity. He based the inquiry on statistical evidence—that for mortality being derived from the registrargeneral's returns for London and from Prof. Lusk's table for New York, and that for morbidity from the records of the General Lying-in Hospital. These statistics are given in tabular form, and are graphically represented by a series of charts, the most important of which is here reproduced.

Explanation of Chart.—The childbed death rate of London

is represented by the dotted line. The death rate of London



from puerperal fever is represented by the broken line. The fever rate of the hospital from all causes is represented by the

line at the top of the blank space. The fever rate of the hospital from septicemia and pelvic inflammation is represented by the line at the top of the vertically shaded portion. All these

are estimated for each quarter of the year.

The childbed death rate of London and the death rate of London from puerperal fever both read from the base line on the scale to the left of the chart in relation to ten thousand confinements. The space between these two curves denotes the death rate of London from accidents of childbirth. Similarly with regard to the General Lying-in Hospital: the fever rate from all causes and the fever rate from septicemia and pelvic inflammation both read from the base line on the same scale, and indicate the amount of fever (in degrees above 100° F. × days) for each patient admitted. The space between these two curves indicates the fever rate from other (accidental) causes.

The approximate fever rate of the hospital and the external meteorological conditions are represented by continuous lines.

The approximate fever rate of the hospital reads from the base line on the scale to the left of the chart, and indicates the approximate amount of fever (in degrees above 100° F. × days) for each patient lying-in during each month. The external meteorological conditions for each month, from observations made at Greenwich, are recorded upon separate scales to the

right of the chart.

He offered the following conclusions: (1) The death rate from puerperal fever is greater during the winter than during the summer months, and this holds good both for London and New York. (2) Septic illness in childbed is more prevalent in winter, and in this respect agrees with mortality, but (3) septic illness, though more prevalent, is attended with less fever, and is therefore of less severity in winter than in summer; (4) on the other hand, cases of febrile illness, other than septicemia and pelvic inflammation, in lying-in women are more prevalent during summer than winter, and (5) as regards severity evince no difference according to the season of the year. (6) Owing to the improvement which has been effected in the service of the hospital, the septic cases have since that time been so few and usually of such slight intensity that they have proved insufficient to neutralize the summer prevalence of non-septic cases, even when the severity of the illness is taken into account; consequently in the hospital, though there is far less febrile illness now than formerly, the amount of febrile illness of all kinds is, generally speaking, greater during the summer than the winter, whereas formerly, septic illness being frequent and often severe in type, the amount of febrile illness was more evenly distributed throughout the year. (7) It is pointed out that in the hospital patients are, by means of open windows and ventilators, more freely exposed to external meteorological conditions than is usual in obstetric practice generally; therefore

it may be inferred that if external meteorological conditions possess any direct influence upon the health of women after delivery, in these lying-in patients above all others the effect would be apparent; but by instituting a comparison for a series of years between the general fever rate and septic rate of the hospital on the one hand, and the total mortality of childbirth and the mortality from puerperal fever in London on the other, it is at once apparent that in the hospital septic illness has been markedly diminished and now displays very little variation according to the season, whereas in London generally during the same series of years septic illness has shown but little tendency to decline and continues to evince well-marked variations in accordance with the season of the year. It is concluded, therefore, that external meteorological conditions are capable of exerting little if any direct influence on the incidence of febrile illness in childbed.

Dr. Champiers expressed his high admiration of Dr. Boxall's latest contribution to the study of puerperal fever. It was well known that in the progress of any research the final problems were usually of increasing difficulty. Dr. Boxall had collected facts with great labor and intelligence, and had analyzed them, with the result that some conclusions came out which were not easy of immediate explanation. Among these was the greater prevalence of puerperal fever during the winter months, of which deficient ventilation and general hygiene might or might not be a full explanation. He had no doubt that in the future, when the problems became better understood, Dr. Boxall's papers would be quoted as one of the most valuable contributions to this great subject, and that the credit of such work would form a very valuable part of the reputation of the Obstetrical Society.

Dr. Amand Routh pointed out that lying-in hospitals had been able to practically eliminate the unfavorable influence of the colder seasons, which pointed to the influence being indirect only, faulty ventilation and disinclination to wash the examining hand often enough being the main influences at work.

Dr. H. Spencer would like to point out (what, no doubt, had occurred to the author) that while he had respectable authority for naming the four quarters of the calendar year—spring, summer, autumn, and winter—yet it was not in January, February, and March that we in this country had "spring" weather; this was the coldest and wintriest quarter of the year, as was well known. He (Dr. Spencer) thought a closer approximation to the seasonal variations would be obtained by beginning to count the seasons at April or, still more accurately, at March.

Dr. Cleveland referred to private practice, and said he had sometimes feared an attack of puerperal fever on being called to patients, shortly after delivery, who had taken a chill and

become feverish. Hence the necessity for keeping the lying-in room free from draughts and of a proper temperature. He believed that a chill might predispose the system to imbibe the puerperal poison, when it was, so to say, afloat, in the same way that diarrhea, if neglected, predisposes the system to take the cholera bacillus when it is lurking in the neighborhood.

Dr. Charles Chepmell said that most febrile conditions due to local inflammations were more prevalent during the winter months. He considered that the general term purperal fever included several distinct types of disease, and that these required classification before any conclusion could be drawn from statis-

tics.

Dr. Boxall, in reply, pointed out that the statistics upon which his observations have been based are admittedly imperfect in certain respects, but he had exercised every care to have them as accurate as possible. In endeavoring to arrive at the actual facts he indicated the possible bearing of such imperfections wherever conclusions were drawn. The evidence afforded in the paper shows that the weather is capable of exerting little if any direct influence on febrile illness in childbed. The seasonal variations which have been observed in septic illnesses are doubtless in great measure the indirect outcome of meteorological changes. Less efficient ventilation during cold and inclement weather is probably an important indirect factor. Less efficient hand-washing, as mentioned by Dr. A. Routh, is probably another. And the pinch of poverty which affects an increased number during winter, and by depressing the general health renders the patient less resistant than usual to baneful influences, must probably be included among the more important agents in producing the variations indirectly.

Meeting of December 6th, 1893.

The President, G. E. HERMAN, M.D., in the Chair.

The following specimens were shown: Dr. W. Duncan: Fibrocystic uterus removed by hysterectomy. Dr. H. Spencer: (a) Transfusion apparatus; (b) saturated solution of salt in her metically sealed tubes (for transfusion). Dr. Horrocks: Transfusion apparatus. Dr. Leith Napier: Dermoid cyst of ovary.

A paper was then read by Dr. P. Horrocks on

INTRAVENOUS INJECTION OF SALINE SOLUTION IN CASES OF SEVERE HEMORRHAGE.

After pointing out that transfusion had been performed for centuries, the author mentioned experiments that had been made abroad and in England to show that an injection of saline solution into the veins of an animal bled to apparent death would revive it, and that recovery would take place. The late Dr. Wooldridge had done this, and had found it best to inject as much saline fluid as blood lost. The following propositions were then laid down:

1. When a person is dead from rapid hemorrhage there is still in the body sufficient blood to carry on life, if it can be circu-

lated.

2. Theoretically half the volume of blood could do the same

work if it were given double the velocity.

3. Death from hemorrhage is due to failure of the heart, and this is due to want of extension owing to the fall in the blood

pressure.

4. This blood pressure can be raised if as much fluid be transfused as there has been blood lost. Details were then given of six cases in which the patients had lost blood to such an extent as to become blanched to the lips and pulseless at the wrist.

Case I.—Ruptured tubal gestation at fifth week; abdomen found full of blood. After clamping the broad ligament, saline fluid was injected into the right median basilic vein; the left tube, with a tiny ovum hanging out of a ruptured portion, was removed along with the ovary; abdomen washed out and drainage tube inserted. The patient then appeared quite dead; artificial respiration was performed and she breathed again. The bandages were found to be saturated with blood, so abdomen reopened and a quantity of blood removed which had probably been driven down by the movements of the diaphragm. Transfusion was continued until a pulse was felt at the wrist. Six pints were used in all. Recovery excellent.

Case II.—Ruptured tubal gestation between second and third months. Scarlet fever being in the house, patient was brought to Guy's. She was quite pulseless, and five pints of saline fluid

were transfused. Recovery.

Case III.—Ruptured tubal gestation at third month. Surroundings bad, so brought to Guy's in an ambulance. Abdominal section; abdomen full of blood; fetus and tube, etc., removed; patient pulseless; six pints of fluid injected; recovery.

Case IV.—Post-partum hemorrhage and placenta previa; patient pulseless; six pints injected; rallied a few hours, pulseless again; more fluid used, but patient sank. Post-mortem: lacerated cervix and large amount of blood in left broad ligament.

Case V.—Hemorrhage on removal of cancer of cervix; patient pulseless; three pints three ounces injected into median basilic; recovery, and patient alive one year after, but cancer has recurred.

Case VI.—Ruptured tubal gestation at two and a half months; abdominal section; excessive hemorrhage during operation, pa-

tient pulseless; six pints injected; patient rallied, but died on

fourth day from septic peritonitis.

A seventh case was mentioned where rupture of a three months' tubal gestation was diagnosed, but consent to an operation could not be obtained for several hours; the patient was brought to Guy's, but died just as she arrived. Transfusion of six pints was done, but with no effect.

Details were given of the method of injecting the fluid by means of the apparatus exhibited by the author last year at the

Obstetrical Society. Summary:

Transfusion of blood is useless and probably injurious.
 Water, with or without salt, should always be used.

3. Amount injected should equal, as far as possible, amount lost.

4. Enough should be injected to make pulse felt at wrist.

5. The worst cases require six pints.

6. No patient should be allowed to die from severe hemorrhage without an attempt being made to save life by transfusion.

7. In less severe forms of hemorrhage, where the patient is in a low condition but not pulseless, injection of two to five pints of saline fluid should be given to avoid secondary syncope.

8. In the more moderate cases each one must be judged on its merits, but when in doubt it is better to inject. Many of these, however, will rally by copious watery injections into the cellular tissue between the shoulders and other parts and into the rectum.

Dr. Routh was surprised the author had not referred to a Committee on Transfusion appointed during the early days of the Obstetrical Society. As one of the members of that committee he could say the inquiry was very exhaustive and brought out some most interesting facts: one was that the injection of a potash salt was invariably fatal, so that in speaking of saline injection it was necessary to state precisely the quantity and quality of salt employed. The author had said transfusion of blood was always fatal, but Dr. Routh had collected every case of transfusion he could find in medical works (48) in which it had been tried, and the mortality was only one in eight and a half. Another paper on transfusion was read and ably discussed at the Medico-Chirurgical Society. Neither was any reference made to Sir Benjamin W. Richardson's experiments on the injection of warm water into the veins of dogs previously bled. He thought it a pity the author should have almost limited himself to quoting foreigners and neglecting the poor English authors.

Dr. Heywood Smith asked why in three cases of abdominal section, after the bleeding had been arrested, the author thought

it necessary to use a drainage tube.

Dr. Herbert Spencer drew attention to a paper he had published in the *Lancet*, June 11th and 18th, 1892, upon the subject of intravenous injection of normal salt solution for the grave

hemorrhage of midwifery. He thought the injection bottle there described was the best for the purpose. In the absence of this bottle (which should always be used in public institutions) an excellent substitute could be made with a jug, and a piece of rubber tubing held in the jug by a clip, which he now exhibited. He agreed with the author that no patient should be allowed to die of hemorrhage without saline transfusion having been performed. He thought it best to pass three ligatures under the vein, as described in his paper, also to fix the arm on a back splint in order to prevent suppuration. He thought the rate of injection employed by Dr. Horrocks much too rapid, for he (Dr. Spencer) had seen venous pulsation from overdistention of the heart when the fluid was injected at one-third the rate. And he asked on what physiologist's authority Dr. Horrocks advocated plain water for injection. He used "normal saline solution," and showed sterilized sealed glass tubes containing two drachms of sodium chloride in solution, which could always be carried in the bag. He thought the fluid should be injected at the body temperature; too cold water (and probably too hot also) was known to produce fatal syncope. He asked the author if hemoglobinuria had been observed in any of his cases. Personally he had not found it necessary to inject more than three or four

pints; usually two were sufficient.

The President agreed that the transfusion of blood was dangerous and ineffective. He thought the paper would be of great use in making more widely known the use of intravenous saline injections. A case was published by Mr. W. Coates in which water was injected with good result. He thought the injection of the blood of lower animals or of milk should be absolutely rejected. If the intravenous injection of water or saline fluid was to be of extended practical use, the method must be simple and easy, for cases requiring it often occurred when the doctor had no good assistance, had not all the instruments he could wish, perhaps was inexperienced in the use of the remedy and yet had to use it quickly if at all. If great nicety was essential to success the remedy could not be used in such circumstances. Careful measurement of the strength of the saline solution, although desirable, was not absolutely necessary. A teaspoonful of salt in a pint of water was quite near enough. Nor was it necessary to have the fluid of the exact temperature of the body, so long as the temperature was between 90° and 100°, or even 80° and 100°. He did not think it mattered much what the precise heat was. It was no doubt desirable that the water should be sterilized, but the chances were millions to one against clean water from the tap containing germs which the leucocytes could not devour; and if exactness as to temperature, strength, and quantity of solution and sterilization were insisted on, the utility of this mode of treatment would be restricted.

¹ Lancet, 1882.

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Dr. Lewers mentioned a case in which he thought the patient's recovery after operation for extra-uterine gestation would

have been expedited if he had used a drainage tube.

After some remarks from Dr. Hayes and Mr. WHITCOMBE, Dr. Horrocks, in reply, said he had not time to look up all the literature of the subject, but he pointed out that the text books still recommended the transfusion of blood. Moreover, the quantity of fluid injected was so different. A few ounces were of no avail; it was quantity that was required. He entirely disagreed with Dr. Spencer that the rate of injection was too quick; as a matter of fact, the circulation itself was so rapid that a pint in four minutes was not too fast. His authority for saying plain water would do was that of the late Dr. Wooldridge. He had, however, always preferred a solution containing a drachm of salt to a pint of water. He thought the question of collapse very important, for the greater it was the less the chance of recovery by saline solution—that is, if the pulselessness were due to hemorrhage, saline injection would save more certainly than if due to collapse. He had pointed out in the paper that many cases of operation where much blood was lost died within twenty-four hours, and he believed that at least some of those would be saved by a timely saline transfusion; so that, if at the end of a serious operation a patient was found to be dangerously blanched, even though not pulseless, he should recommend an intravenous injection of two to five pints of saline solution, in order to avoid this secondary collapse.

REVIEWS.

A TREATISE ON THE SCIENCE AND PRACTICE OF MIDWIFERY. BY W. S. PLAYFAIR, M.D., LL.D., F.R.C.P. Sixth American from the eighth English edition. With notes and additions by Robert P. Harris, A.M., M.D. With five plates and two hundred and seventeen illustrations. Philadelphia: Lea Brothers & Co., 1893.

This work has long occupied a prominent position both as a text book and book of reference in this country and in England. Numerous students have gleaned valuable suggestions from its pages, and its practical character and the author's ability for clear

and concise writing are well known.

It seems a sacrilege to criticise such a work; one hesitates long before plunging his dissecting knife into a body once loved, once admired. But the wheel of time moves on relentlessly. The inconsistencies and defects in the Galenical theory were exposed through the elaborate and clear demonstrations of a

Harvey. Drugs and operations highly valued yesterday are today superseded by still more efficient methods. The author is aware of these unalterable laws, and he has recognized the absolute necessity of advance. In the preface he writes that the work has been subjected to a thorough revision. "Since 1889 much progress has been made in certain departments of obstetrics, necessitating changes amounting to the almost complete rewriting of some of its chapters."

Yet, in spite of the honest attempts to embody in the work the recent advances in obstetric medicine, we encounter too frequently views long discarded as obsolete, antiquated methods covered with the cobwebs of tradition, and a musty atmosphere which no amount of "antiseptic lotions" can dissipate.

The chapters on anatomy, the physiology of pregnancy, and the mechanism of labor have been carefully revised and are a

most valuable feature of the work.

In the section on extra-uterine pregnancy we find an air of uncertainty and a want of decision. The author appears to favor operative treatment, but he devotes so much space to the description of other methods that the student must certainly be bewildered. Martin, of Berlin, is cited as supporting the electrical treatment. This is the elder Martin, who died a long time ago. The present Martin, of Berlin, is an ardent champion of the operative treatment; at the last International Gynecological Congress, at Brussels, he advocated laparatomy in every case. He said "that the extirpation of the whole tumor is the only proper line of treatment"; he has "no confidence in the injection of morphine or in the electrical treatment."

Concerning the chapter on abortion and premature labor, we wish to point out that "filling the vagina with a tolerably large sponge, in the interstices of which the blood coagulates," is not "the method most usually employed" in this country. We are pleased, however, that the author takes exception to this method and advises as a substitute "pledgets of cotton wool." But in a country in which "tolerably large sponges" are usually employed as vaginal tampons, the recommendation to give a thorough vaginal douching before filling the vagina with pledgets of

cotton wool seems certainly not superfluous.

We regret that we cannot agree with the author that "sponge tents" are the best means of dilating a contracted cervix in cases of abortion. The advice that "sponges, so generally employed in labor, should be banished from the lying-in room, since it is practically impossible to keep them perfectly clean," is good and timely, but it applies equally forcibly to the sponge tent. The sponge tent should be relegated to a place of "innocuous desuetude"; it is not in harmony with "the recent advances in obstetric medicine." Still, sponges have been old friends of the author, and, while he advises their banishment from the lyinging-in room, he has succeeded in hiding a few, which he intends

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to use for "assiduous fomentation, should the perineum be ex-

cessively tough and resistant."

The section which treats of the management of labor is filled with excellent suggestions, but, like other parts of the book, contains sentences not in harmony with our present ideas. In the diagnosis of position and presentation of the fetus and the progress of labor, the advantages of abdominal palpation have not been considered worthy of mention. Only brief reference to abdominal palpation is made in the chapter describing the anatomy and physiology of the fetus.

This method equals, if it is not superior to, vaginal examination as a diagnostic aid. It is certainly free from the dangers necessarily accompanying vaginal examinations. Most modern obstetrical writers have recognized this fact, and the description of abdominal palpation occupies a prominent position in their

works.

For these reasons we do not consider it good advice "that during the second stage of labor vaginal examinations should be more frequently repeated." If the diagnosis of position and presentation is once made and the case progresses normally, "frequent vaginal examinations" are unnecessary. We have delivered a large number of cases without making a single vaginal examination, and we rarely have occasion to make more than two examinations. We do not fear "that overfrequent vaginal examinations . . . are apt to irritate the cervix," but we do fear to inoculate the pathogenic bacteria, which are so frequently found in the vagina, into the abraded surfaces occurring in nearly every case of normal labor.

Thorough disinfection of the obstetrician's hands will diminish these dangers, but the advice "to thoroughly scrub the hands with soap and water, and the nails with a hard brush, followed by thorough washing in bichloride solution 1:1000" will be imperfectly obeyed if vaginal examinations are fre-

quently repeated.

We hope that the author is misinformed when he states "that traction upon the cord is the practice usually recommended and followed." Credé's method of placental expression is universally adopted, and only historical interest requires the description of other methods. The picture illustrating the delivery of the placenta through traction upon the cord is very realistic, but we doubt that Fig. 112 would give one a correct idea of Credé's method.

The chapters dealing with abnormal labor, contracted pelvis, and operative obstetrics are not free from points upon which men might honestly differ; but operators may obtain equally good results through different methods. This part of the book, more than any other, recognizes the recent advances in the obstetric art. We consider the strong tendency toward conserva-

tism no disadvantage; it will act as a check to the swing of the

pendulum toward radicalism.

The section on the Cesarcan operations and symphysiotomy is admirable. It is largely supplemented by additions from the American editor's pen. The name Harris is intimately associated with the advance and development of the Cesarcan operation, and we doubt not but that many will turn to these pages for information and advice when these operations come into question. A better summary of their prognosis and tech-

nique can certainly nowhere be found.

The chapter on puerperal septicemia is unnecessarily complicated and the kernel of truth lost in masses of old ideas. There can no longer be any doubt but that puerperal septicemia is caused by the introduction of pathogenic germs into the woman's genital tract. So long as the physician abstains from vaginal examinations, or exercises the greatest care and strictest antiseptic precautions before making one, he will not produce puerperal septicemia. Amongst our own Indian tribes puerperal fever is practically unknown, in spite of their living in the vilest hygienic surroundings. They are free from this curse of civilization, because the native midwives keep their fingers out of the vagina. Nature will take care of the microbes which are natural inhabitants of the vagina; but if the physician multiplies their numbers with his dirty fingers, the system becomes overwhelmed and puerperal fever results. The subject of puerperal fever is not so intricate as the author would lead us to believe—it is certainly not due to zymotic causes. If a piece of the placenta is left behind it may decompose and give rise to putrid intoxication, and if large numbers of pathogenic bacteria find an entrance into the woman's genital canal they will multiply rapidly, because the conditions are exceptionally favorable for their development and distribution into the system. result is puerperal septicemia. Both accidents can be prevented through care, cleanliness, and the avoidance of unnecessary vaginal examinations. Good plumbing and airy rooms are always desirable advantages, but they are not of prime importance. Let the author warn against frequent vaginal examinations, instead of recommending them, and he will have aimed a most powerful deathblow at puerperal septicemia.

In the treatment of puerperal septicemia we find no mention of the use of ergot. This drug is of unquestionable value; it contracts the channels through which the poison is conveyed into the system, and it is obvious that the contracted muscular structures are a less favorable nidus for the bacteria than the

soft and succulent tissues of the flaccid uterus.

Intra-uterine douches are often of advantage in the beginning of an attack of puerperal fever, especially if it be of the putrid type. Their frequent repetition may be harmful; they should never be administered without a preceding vaginal douche.

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This important point has not been mentioned by the author; he probably considered it self-understood. In spite of these defects, and taking a broad view of the work, it must certainly be termed an admirable book. To the student who reads other text books its perusal will be of great value, and even the busy practitioner will find it interesting and instructive reading.

J. R.

Selected Papers in Gynecology and Obstetrics. By D. Berry Hart, M.D., F.R.C.P.E., etc., late President of the Edinburgh Obstetrical Society. With 20 plates and 49 illustrations; pp. 239. Edinburgh and London: W. & A. K. Johnston, 1893.

This volume brings together in convenient form many valuable papers which have previously appeared in the Edinburgh medical and other journals, giving the results of the studies and original investigations which have contributed to make the name of their author famous. They are arranged in the natural sequence of anatomy and physiology, the mechanism of natural and morbid labor, the pathology of labor, and practice.

Transactions of the Edinburgh Obstetrical Society. Volume xviii. Sessions of 1892-93. With plates; pp. 307. Edinburgh: Oliver & Boyd, 1893.

Among the interesting contributions to this volume are papers on version, placenta previa, fetal pathology, the anatomy of advanced pregnancy, the extraperitoneal form of extra-uterine gestation, protracted gestation, premature sexual development in relation to ovarian tumors, etc., by such well-known men as Alexander Simpson, Nagel, Berry Hart, Ballantyne, Halliday Croom, and others. The volume contains quite a large proportion of original work and is well worth reading.

Transactions of the American Gynecological Society. Volume xviii. For the year 1893. Illustrated; pp. 542. Philadelphia: Wm. J. Dornan, 1893.

This volume contains the full text of the proceedings of the eighteenth annual meeting of the Society, held in Philadelphia in May last, an abstract of which appeared in the June and July numbers of this Journal.

The good work of this society is so well known to all who try to keep near the front ranks of the specialty that any criticism or praise seems superfluous.

A DICTIONARY OF MEDICAL SCIENCE. Containing a full explanation of the various subjects and terms of Anatomy, Physiology, Medical Chemistry, Pharmacy, Pharmacology, Therapeutics, Medicine, Hygiene, Dietetics, Pathology, Surgery, Bacteriology, Ophthalmology, Otology, Laryngology, Derma

tology, Gynecology, Obstetries, Pediatries, Medical Jurisprudence and Dentistry, etc. By Robley Dunglison, M.D., LL.D., late Professor of Institutes of Medicine in the Jefferson Medical College of Philadelphia. Edited by Richard J. Dunglison, A.M., M.D. Twenty-first edition, thoroughly revised and greatly enlarged, with the Pronunciation, Accentuation, and Derivation of the Terms. In one imperial octavo volume of 1181 pages. Philadelphia: Lea Brothers & Co., 1893.

This standard authority has maintained its supremacy through a score of editions and for more than threescore of years, and will maintain it for years to come. While six thousand subjects and terms were added to the previous edition, the great activity in recent medical research and literature has necessitated the addition to the present volume of more than forty-four thousand. Pronunciation has for the first time been introduced, and is indicated by a simple and clear phonetic spelling. Derivation is very fully given. The clear definitions which have always distinguished the work have been expanded and include much valuable and practical information.

The increase in the present work would in itself fill a large volume, but by careful condensation, the omission of obsolete matter, and an enlargement of the size of the page the work is

kept within the limits of a convenient volume.

The work, taken altogether, certainly deserves the high praise and appreciation that it has elicited.

ABSTRACTS.

1. Toulouse, Edulard: Etiology and Clinical Form of Puerperal Psychoses (Nouv. Arch. d'Obst. et de Gyn., October and December, 1893).—The author introduces this study with a history of the subject from the time of Hippocrates (who attributed the disorders of the brain during the puerperium to a metastasis of the lochia) up to the present day. He includes under the term "puerperal," pregnancy, labor, the lying-in period, and lactation; and under the head of "psychoses," all the

psychical disorders noticed during this period.

I. Etiology. Frequency of Puerperal Psychoses. (1) Relatively to the number of confinements.—According to Reid there are 2 cases of puerperal mania to every 1,000 labors, according to Gream 5.5, according to Béhier 1. These statistics apply, however, to post-partum observations only. (2) Relatively to other forms of mania.—In 1838 Esquirol found in every 100 cases of insanity 8.2 due to puerperal mania; in 1843 Parchappe made out the percentage to be 5.5; in 1858 Marcé placed it at 3.7, in 1890 Faure at 2.1. We must, however, bear in mind that there

has been of late a tendency to do away with the term "puerperal mania," which thus appears less often upon bills of insanity. (3) Relatively to the period during which it occurs.—In striking an average of the statistics furnished by Esquirol, MacDonald, Marcé, and Mme. de Gorzky, the cases occurring during pregnancy are 11.6 per cent, those of labor 52.4, and those of lactation 35.9.

Social Environment.—Cases of mania in those recently confined occur most frequently among the wealthy who lead lives of idleness and excitement, and after weaning among the poor who are badly nourished and debilitated. Unmarried mothers are frequently subject to mania, because of the mental emotions

they undergo and the lack of care received by them.

Age.—Between 25 and 30 years puerperal psychoses are the most frequent, this being the period of the greatest fecundity. Marcé notes that the tendency to mania increases with the ap-

proximation of pregnancy to the menopause.

Physical Constitution of the Patient, and Intercurrent Diseases.—Anemia is a predisposing cause, as are tuberculosis, some changes of diet, or certain intercurrent diseases which may cause debility. In typhoid and scarlatina, alcoholism and chloroform intoxication, the psychic derangement may be caused by toxic matters of external origin.

Psychic Influences.—Chilling of the body has been noted as a cause. A wet-nurse became insane upon hearing a clap of thunder. A recently confined woman became delirious for the first time after smelling musk, and a second time from the odor

of an oil painting in her husband's shop.

Moral Causes.—The fear of a relapse in the case of those who have been delirious before, despair at having been deserted, domestic dissensions, terror in time of war, modesty offended by the first conjugal approach, the delivery of twins in the case of a woman suffering from poverty, the discomforts of pregnancy, financial embarrassments, have all been noted as causes of mania. Esquirol considers that emotional influences are to blame in 50 per cent of the cases; Hansen, in only 2 per cent. Morel and Marcé believe their rôle to be an accessory one, and this is probably the correct view.

Causes connected directly with the Puerperal State. (a) Conception.—Esquirol and Marcé quote cases in which delirium appears to have started from the moment of conception, to have lasted throughout pregnancy, and to have disappeared with labor. (b) Frequent child-bearing is considered by many authorities to predispose to mania on account of the exhausted condition of the system. Jdanhof, however, considers that primiparæ are more subject to it than multiparæ, they being more liable to

complications after labor.

Sex of the Child.—Some women become insane during pregnancy or after labor when boys are born, and remain sane when

the child is a girl.

Alternateness and Periodicity.—Esquirol has noted women who became insane in every second labor, others at the third or

the fifth month of each nursing.

Accidents and Complications of Labor.—Violent pains, hemorrhages, the application of the forceps, difficult labor, and, in short, anything opposing prompt delivery, has been included in the etiology. Puerperal infection will be treated of later together with eclampsia.

Return of Menstruation.—Marcé claims to have noted this as a cause in 11 cases out of 44. Esquirol, on the contrary, observed that mental troubles were frequently relieved by the return of

the menstrual flow.

Weaning.—Abrupt weaning has been known to cause mania.

So has unduly prolonged lactation.

Eclampsia.—In 100 cases of eclampsia Braun noted mental disorders 8.3 times, Wieger 7.1, Seegen 4.3, Olshausen 6. According to Schwegel and MacDonald post-eclamptic delirium stands in the relation of five per cent to all puerperal psychoses. The mania may follow convulsions, or may appear after a semicomatose condition; sometimes it seems to replace the eclamptic attack or to alternate with it. If eclampsia is caused by a condition of auto-intoxication due to the functional insufficiency of the liver and kidneys, which fail to destroy the poisons normally manufactured in the tissues or received through the stomach, then albuminuria, convulsions, and delirium would all be symptoms of the same disease. The new theory that eclampsia is due to a microbe would not alter this view—the intoxication would simply be of external instead of internal origin.

Infection.—Signs of infection have been noted in \$6 cases out of 100 by Hansen, 66 by Jdanhof, 50 by Campbell Clark, and 70 by Lallier. Considering that these cases were all studied recently, it is somewhat remarkable that so many cases of puerperal infection should have been met with in these days when

antisepsis is so greatly reducing their number.

Infectious disorders acting through the lymphatic system (lymphangitis, phlegmon, peritonitis) or the venous system (phlebitis, endocarditis, pyemia) may all cause mental derangement. It is probable that the fever and the delirium are merely symp-

toms of a general intoxication.

Predisposition to Insanity.—Madame de Gorzky found that 33 out of 35 patients suffering from puerperal mania were by heredity predisposed to insanity; Schüle, on the contrary, declared that heredity played no part in the production of puerperal psychoses. Between these two divergent views we find all shades of opinion. It is well not to give too much weight to heredity as a cause, but, before falling back upon it, to exclude all other causes, which will necessitate a close study of the etiology of psychoses in general, and of anatomico-physiological conditions.

II. CLINICAL Types. Psychoses of Pregnancy.—These are the most rare; predisposition here plays the larger part, aggra-

vated by disorders of nutrition and by eclampsia.

(a) Obsessions, impulses.—These include kleptomania, incendiary mania, tendencies to homicide and suicide. One woman five months pregnant drowned her three children in a well and threw herself after them. Formerly when it was considered that the longings of a pregnant woman must always be indulged, strange desires were constantly developed. One woman's husband paid a baker to let his wife bite his shoulder! Careful note must be taken whether the longing is really a mania, or whether the woman is taking advantage of her condition to satisfy some vicious tendency.

(b) Time of the appearance of the psychoses of pregnancy.

They may come at any moment. In some women the periodicity of their appearance is such that pregnancy may be suspected from the mental condition, even before the occurrence of physical signs. Rare before the third month, psychoses become more frequent toward the seventh; according to Savage those which appear before the fourth month are more easily

cured than those which appear later.

(c) Clinical aspect.—Maniacal conditions have been noted, melancholy is even more frequent, and delusions, such as those of persecution, often occur. Suicide is sometimes attempted

under the influence of hallucinations.

(d) Development.—Mania developing during pregnancy is usually of long duration, but is often cured by parturition. Some physicians, noting this fact, have even recommended pregnancy as a cure for insanity; but if the mental disorder antedate conception, pregnancy and labor have not a curative effect, but rather the reverse. This treatment is unscientific, irrational, and dangerous.

(e) Prognosis.—The psychoses of pregnancy are usually curable at a longer or shorter period. Those connected with eclampsia are of short duration. A delirium resembling that of fevers will be more likely to disappear than a delusion. Labor oftentimes cures psychoses which have originated during pregnancy.

Psychoses of Labor.—The mania caused by an intensity of pain or the length of labor often causes a temporary aberration of mind. Occasionally acute mania occurs during an easy labor, usually at the moment of expulsion of the fetus or placenta. The woman ceases her muscular efforts, falls to singing, crying, and abusing her attendants, or tries to jump from the bed. Calm usually returns at the end of a few hours, but the mania has been known to last three months. Eclamptic mania may come during pregnancy, but usually appears a few hours or even days after delivery. The patient, who has been in a semi-comatose condition, suddenly wakens, becomes agitated, talks, cries, imagines that she sees people and animals about her, is frightened,

laments, and weeps. This condition may last a few hours or a few days, and then, after a second period of unconsciousness, the patient may regain her senses.

The delirium of labor, whether eclamptic or not, is characterized by its short duration, its curability, and by hallucinations. In some rare cases excitement has increased and death

supervened.

Post-partum Psychoses.—These are the most frequent and the most widely known. The post-partum period may be divided into two portions: the first, during which the uterus and its adnexa are returning to their normal anatomico-physiological condition, and the dangers are such as attend the uterine wound; the second, during which lactation may be the cause of disturbances of nutrition in the woman. This division must not be too rigidly enforced. Some psychoses seem to be connected directly with the act of parturition, the exhaustion consequent upon the nervous shock, and the acute eclamptic attack which it may cause. On the other hand, mental disorders which appear when lactation is established cannot all be attributed to this phenomenon; only those which appear about the sixth week after labor are, as a rule, called psychoses of lactation.

(a) Conditions of their appearance.—They may come within a few hours to two months after delivery. According to Esquirol, out of 54 cases, 37 became affected within two weeks, and 17 from two to six weeks after. Toulouse, out of 34 cases, noted that 24 appeared within ten days, a fact which bears out his view that the greater number of post-partum psychoses have

some form of infection for their cause.

(b) Course and prognosis.—These cases are usually of rapid development and curable. The return of suppressed lochia, milk, menstruation, or alvine dejections is often the first symptom of a cure. Convalescence is usually slow. Restoration to health occurs more frequently when excitement exists than when there is depression. The younger the woman the better the chance of recovery.

There will occasionally be a case of acute delirium which is

rapidly fatal.

Psychoses of Lactation.—These are of infrequent occurrence, but usually appear from such causes as the establishment of the function, the suppression of milk, or some abnormal condition. The form of mania is usually a species of disordered excitement of the mental faculties or a weakness of these faculties. The condition is usually of abrupt origin. Fever frequently accompanies it; the physical signs are those of a feverish condition. The secretions are altered: perspiration is often suppressed, the saliva is thickened and greenish in hue, the digestive juices and the bile are diminished in amount, the feces hard and dry, and there is frequently retention or diminution of urine. Albumin-

uria may exist, and glycosuria. The milk is suppressed in 70 per

cent of the cases (Campbell Clark).

The physical symptoms are usually the first to appear, especially when exhaustion seems to be the determining cause of the delirium. The woman loses flesh and appetite and sleep, complains of palpitation of the heart and of indigestion, and becomes daily paler. Her insanity may be of a melancholic type, acute mania, or partial delirium. The prognosis is usually favorable.

III. It is truly stated that there is no such thing as puerperal mania, any more than it can be said that there is puerperal tuberculosis or any other disease that happens to develop at this The puerperal state, however, consists of a series of modifications of the organism, caused by pregnancy and labor and the accidents which may attend them. The condition, then, is a complex one and includes various physiological and pathological accidents—auto-intoxication in its first phase, violent traumatism in the second, and frequently infection in the third. The psychoses of these different states vary in character. Leaving aside the non-classifiable psychoses developed during the puerperal period, we have seen that eclamptic auto-intoxication usually determines an acute and brief delirium with hallucinations; post-partum infection produces a similar delirium or else a form of mental confusion, which may also be caused by prolonged lactation; while abrupt weaning may induce an autointoxication which causes delirium like that of eclampsia.

In general the delirium of short duration and accompanied by hallucinations is usually characteristic of toxic infection; and chronic delirium with a species of stupor is found after either infectious diseases or those causing great exhaustion. There is room for more definite classification, which the future

will probably bring.

One form of post-partum mania is often noticed, and is characterized by certain physical and psychical symptoms of equal importance. The prodromata are frequently unnoticed, the patient's character undergoes a change, and she becomes either irritable and exacting, or indifferent to her surroundings, sad or sullen. Chills supervene, the temperature rises, the pulse is rapid, and the patient complains of pain in the abdomen, which has become somewhat rigid, of headache, or of a feeling of oppression. The lochia are usually suppressed or fetid, the breasts become flattened and empty, the tongue is white, there is anorexia and constipation. Noisy delirium follows; the patients are excited, and it is evident that they are tormented by hallucinations. When the end is to be fatal, typhoid symptoms appear and the patient dies in acute delirium. As a rule, however, recovery occurs suddenly after a few hours or days of the delirium, or gradually after a longer or shorter period of semi-stupor.

2. Bumm (Würzburg): The Variation in the Virulence of PUERPERAL INFECTION AND THE LOCAL TREATMENT OF PUERPERAL Fever (Centralblatt für Gynäkologie, No. 42, 1893).—Investigation demonstrates the fact that in the greater number of cases of puerperal infection the endometrium forms the gate through which the infectious micro-organisms and their products are admitted into the system. It is not denied that wounds of the perinenm, vagina, or cervix which have become septic may produce fever or are occasionally the cause of a general sepsis; but usually the infection remains local in these cases and the septic germs do not travel much beyond the immediate margins of the wound. If the endometrium is the seat of the sepsis, then the micro-organisms rapidly extend their field of devastation, and, easily penetrating the large veins and lymphatics, soon overwhelm the general system. Therefore Bumm concludes that vaginal or perineal wounds are of subordinate importance in the treatment of puerperal fever, and the efficiency of the therapy depends mainly upon the efficiency of the intra-uterine treat-

The most brilliant and constant rewards from intra-uterine treatment are observed in puerperal endometritis originating from a decomposition of retained secundines. The rapid decline of the fever after the removal of these putrid masses proves the views of those correct who hold that in these cases the fever is produced through the absorption of the products of

decomposition—a putrid intoxication.

The frequency with which chills and temperature elevations succeed the removal of the retained placental remnants led Bumm to precede the operation by a thorough irrigation of the cavum uteri with several quarts of boiled water, thus washing away the soluble products of decomposition, which otherwise might be absorbed by the denuded tissues. Since the introduction of this method these unpleasant disturbances have diminished in frequency. Antiseptic solutions, as bichloride of mercury, lysol, or carbolic acid, were found to possess no advantages over boiled water. If the intra-uterine decomposition has extended over several days the results are less gratifying and lasting. The temperature will soon rise again, the putrid odor of lochia returns, and a microscopical examination of the uterine discharge shows numerous bacilli. The cause of these relapses is the condition of the endometrium; this membrane has become necrotic and harbors myriads of micro-organisms. A simple removal of the decomposing placenta does not suffice in these cases, and a lasting cure is only attained after a thorough curetting of the uterus and tamponade and drainage with iodoform gauze. There may exist simultaneously with the putrid intoxication a septic form of puerperal fever. Then the lochia have a putrid odor, but besides the bacteria of decomposition they also contain streptococci and staphylococci. In these cases the

local therapy may prevent the continuous absorption of the putrid material, but the progress of the sepsis continues unaltered.

The author next discusses the septic form of puerperal fever, when septic germs, generally streptococci, invade the organism. The lochia are sero-sanguinolent or sero-purulent, and in the later stages wholly purulent; the quantity is less than in putrid endometritis; its odor is sometimes mawkish. Streptococci are, present in variable numbers, proportionate to the severity of the infection.

In these cases the local therapy, according to Bumm's experience, is decidedly unsatisfactory and uncertain, no matter the means employed. The author has disinfected the uterus with every known antiseptic; he has curetted and afterward applied concentrated solution of carbolic acid or iodine, tamponade of the uterus, and intra-uterine suppositories of iodoform—in short, all and everything ever advocated was tried, only to find that while in one case improvement followed, the very next one was entirely uninfluenced by the remedies employed. He says that if we meet a case of puerperal fever in the early stages it may be justifiable to resort to intra-uterine treatment; but he expects but seldom any benefit from it, and has seen cases which were decidedly aggravated.

The inconstant results in different cases are due to the variable virulence of the infectious micro-organisms. The highly virulent forms penetrate the tissues with astonishing rapidity and hold the gained ground with great tenacity. Schimmelbusch publishes experiments in which fresh-made wounds inoculated with streptococci and anthrax bacilli were immediately cleansed with strong disinfecting solutions, yet the animals perished from the infection. Bumm found that virulent streptococci penetrate the tissues at a rate of two centimetres in six hours, and in some experiments they could, after so short a time had elapsed, already be demonstrated in the general circulation.

It must be seen that in such highly virulent infection local treatment must be inert. We are too late; the poison is out of our reach, and a uterine douche has no more potency than would have the painting of a disinfecting solution upon an erysipelatous eruption. If the clinical symptoms show a spreading of the sepsis (pelveo-peritonitis, metastatic abscesses) nothing can be expected from local treatment. Yes, a simple uterine douche is fraught with danger, as new wounds are of necessity made, old ones reopened, or infectious thrombi may be driven into the general circulation.

If the infectious germs are of low virulence, then the septic process remains localized, causing only a septic endometritis, and with the expulsion of the necrotic decidua the disease has run its course. In these cases the washing-out of the uterus sometimes produces a rapid decline of the fever. But more frequently the course of the disease is uninfluenced by this treat-

ment; the fever continues until the sepsis has localized itself and the necrotic tissues are cast off.

Thus it may be seen that in the truly septic type of puerperal fever local treatment has only a limited field of usefulness, and that intra-uterine manipulations are often accompanied by danger. Bumm has observed serious accidents following intra-uterine treatment, and, aside from sublimate and phenol intoxications, he mentions two cases in which death was undoubtedly due to simple intra-uterine irrigation.

The liberal administration of the ergot of rye is finally warmly praised by the author. The drug is given with the onset of the fever, and continued until the temperature has again become normal. Microscopical examinations of septic nteri have shown that the sepsis does not spread uniformly in all directions, but that where the tissues are dense and firmly contracted the germs are absent, while in the loose connective tissue and vascular structures they abound in immense numbers.

Now, supposing two women infected with an equal number of equally virulent cocci, it is undeniable that the woman who has a firmly contracted uterus is less likely to succumb than the one with a large and flaceid organ. In the former the sinuses are obliterated by firm muscular contraction, while in the latter the projecting thrombi and soft, succulent tissues form a nidus

in which the cocci grow and travel without hindrance.

That firmly contracted tissues present a mechanical barrier to the spread of sepsis is demonstrated by the relative rarity of puerperal fever in abortion and the great virulence of the sepsis in twin pregnancies. A good illustration and verification of this theory is also observed in cases of erysipelas, in which a strip of adhesive plaster firmly bound around the margin of the eruption forms a neutral zone which the minute foes of destruction cannot transcend.

3. Münder: Labor in Young Persons (Archiv für Gynäkologie, Band xlv., Heft 1).—It seems strange that while a number of exhaustive monographs deal with the subject of "labor in old primiparæ," no paper has been written investigating the action of labor in young women. Münder's paper is based upon the clinical material of the Maternity Hospital in Berne during the years 1872 to 1891. In these years 6,126 cases came under observation, of which 493 cases, or 8.05 per cent, were below 20 years of age. The results of Münder's investigations, which were made under the guidance of Prof. Müller, are briefly the following:

1. Menstruation appears earlier than normal. Hecker found in old primiparæ the onset of menstruction at about the twentieth year, from which he concluded a late development of the

sexual faculties in old primiparæ.

2. Labor proceeds, as a rule, quite favorably.

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3. The pelvic diameters become smaller with decreasing age, proving that the bony pelvis is not fully developed before the twentieth year.

4. Vertex and face presentations are more, breech presenta-

tions less, frequently observed.

5. The duration of labor is about 2.3 hours longer compared with other primiparæ. This time difference decreases

as we approach the twentieth year.

6. Eclampsia, uterine inertia, and other complications are of usual frequency. Of craniotomies a higher percentage is noted, probably owing to the greater prevalence of pelvic contraction.

7. Lacerations of the perineum are not often met with. The author thinks this due to the extensive use of episiotomy.

S. A relatively greater number of female children is noted. It was also found that the weight of the child is proportionate to the age of the mother.

9. Premature labor is more frequent, but the prognosis for

the child is favorable in young primiparæ.

10. The puerperium presents no essential differences.

J. R.

4. Frommel: Ventrofixation for Retrodeviations of the Uterus (Zeitschrift für Geburtshülfe und Gynäkologie, Band xxvii., Heft 2).—Frommel was formerly a strong opponent of ventrofixation. He advocated as a substitute the fixation of Douglas' folds to the peritoneum of the pelvic inlet, somewhat above the origin of the ligamentum infundibulo-pelvicum. The advantages which he claimed for his operation were restoration of the uterus to its normal position without absolute fixation and immobility. Clinical experience has made it clear to him that the good results obtained from his operation were not lasting. After some time the peritoneal folds became lax and the organ resumed its abnormal position. He therefore abandoned the operation and resorted to ventrofixation of the uterus in cases in which strong adhesions and other causes precluded the possibility of a successful restoration of the organ by means of pessaries or the different vaginal operations.

One of his cases thus operated on conceived, passed through a normal pregnancy and childbed; the uterus retained its normal position. The union of the uterus to the parietal peritoneum is rapid and firm. This could be seen in a woman who died of pulmonary embolism eleven days after a ventrofixation. The uterus was found firmly adherent. Another interesting observation in this case points to the probably problematic success of tubal resection. At the time of the operation the abdominal orifice of the right tube was found closed; salpingotomy was performed, but eleven days later this artificial opening had

nearly closed again.

5. MERZ: RUPTURE OF THE UTERUS: ITS TREATMENT (Archiv für Gynäkologie, Band xlv., Heft 2).—The author reports in extenso two eases of ruptured uterus. One was treated expectantly and died; the other, which was operated on, terminated in recovery. To obtain a good picture of the various methods of treatment and their results, he collected two hundred and thirty cases out of the current literature. In one hundred and eightyone of these a complete rupture of the uterus was noted. Rupture of the uterus is observed under widely differing conditions, and various factors may be the exciting cause. Therefore Merz found that, even through so large a collection of cases, he was unable to arrive at final conclusions, and to a certain extent we must individualize the treatment in each individual ease. The author favors operative treatment, although in his statistics the expectant plan (iodoform wick and uterine drainage) gives the best results, namely, 66.6 per cent recovery, as compared with 48.1 per cent from laparatomy.

Should the child be in utero, he advises delivery per vias

naturales; in all other cases immediate laparatomy and closure

of the uterine wound, or the Porro operation.

If laparatomy must be excluded, drainage of the uterus and packing of the wound with the iodoform wick, without preceding irrigation, is advocated.

6. Bernheim, M.: Treatment in Apparent Death of the NEWLY BORN, MORE ESPECIALLY BY THE METHOD OF LABORDE (Nouv. Arch. d'Obst. et de Gyn., September and October, 1893). -In an exhaustive article the author reviews the various methods in use for the resuscitation of apparently asphyxiated children. The first inspiration being considered due to the action of the air upon the cutaneous surface of the child, it is natural, when the child does not breathe, to endeavor to cause it to do so by exciting the nerves of the skin, by exposing it to a draught from an open window, flagellations with a wet cloth, or friction with the hand, or a piece of flannel dipped in alcohol, over the precordial region. These methods are useful in those cases only in which the child is only stunned, so to speak; not in those where there is profound narcosis. Hot and cold baths, with or without mustard, act in the same way, the best results being obtained from alternating the baths of hot and cold water.

Among other methods of resuscitation may be mentioned that of Marshall Hall, which consists in placing the child prone upon a table and rolling it over, now on its right side and then on its left, about fifteen times to the minute. When the child is on its stomach the tongue protrudes, fluid flows from the mouth, and the air enters the respiratory tract. It will be noticed that during this maneuvre the tongue protrudes, as it also does in the

Sylvester method of resuscitation.

Schultze's method is more frequently resorted to than the pre-

ceding, especially in Germany, and undoubtedly gives better results than any other process with the exception of insufflation, but is open to the objections that it is extremely fatiguing to the operator, and that it cannot be applied when there is any fracture of the child's clavicle or humerus.

As Budin remarks, it is doubtful whether direct insufflation from mouth to mouth is effectual in forcing air into the lungs, on account of the soft state of the tissues. Any mucus is also pushed further down by its means; Ribemont even found small masses of meconium in the pulmonary tissue of a four-day-old infant

who had died of pneumonia.

Bernheim describes Ribemont's tubes, but, unlike Budin, approves of the use of the rubber bulb. The special object of this article, however, is the description of a method more recently employed by Laborde. It consists in seizing the child's tongue with the thumb and index finger and a piece of linen, as near to the base as possible, pulling it forcibly forward, then relaxing it, repeating this maneuvre about fifteen times in a minute. explanation of this process Laborde says that the effect is due to a primary excitation exerted by the lingual traction upon certain sensory nerves, and their reaction upon the motor nerves which govern the respiratory muscles. The sensory nerves affected are those of the tip and of the base of the tongue, the glosso-pharyngeal and the lingual, and the nerves of the larynx and trachea, notably the superior laryngeal, which plays an important part in the excito-motor mechanism of the respiratory function, and which, it will be remembered in this connection, sends filaments to the base of the tongue. The laryngeal nerves then, and the tracheo-bronchial branches of the pneumogastric, with the glosso-pharyngeal and lingual nerves as accessories, transmit the stimulus to the centre, whence it is reflected to the motor nerves of respiration, more especially the phrenic, which acts upon the diaphragm and by its movements initiates respiration.

Laborde has conducted a series of laboratory experiments upon dogs to establish these facts; he has also applied his method of

resuscitation to still-born calves with success.

Ten apparently asphyxiated children have been resuscitated by rhythmical tractions of the tongue; the number is as yet too small to allow of definite conclusions, but the results so far permit of a reasonable hope as to the value of the method.

A. R. S

7. Burkhardt: The Influence of the Vaginal Bacteria upon the Morbidity of the Puerperium (Archiv für Gynäkologie, Band xlv., Heft 1).—Burkhardt endeavored to find out how far Döderlein's investigations of the normal and pathological vaginal secretions could be turned into practical account in hospital and private practice. For this purpose the vaginal secretions of one hundred and sixteen pregnant women were

subjected to a macroscopical, microscopical, and bacteriological examination.

In sixty per cent of these cases the secretion was undoubtedly normal (milk-white, decided acid reaction, abounding with Döderlein's vaginal bacilli), while in twenty-eight per cent it was pathological (purulent, faintly acid or neutral, and containing pathogenic bacilli).

Cases of the first group showed a puerperal morbidity of twenty-three per cent; of the latter, fifty per cent deviated

from the normal.

Vaginal examinations were found to exert no unfavorable influence upon the puerperium, even in cases with pathological secretions. The morbidity was twenty-three per cent and fifty-eight per cent respectively. These figures show only a trifling difference if compared with the first group (twenty-three per cent, fifty per cent). Döderlein objected to women with pathological vaginal secretion as material for instruction. He claimed that vaginal examination, even under the strictest precautions, had a noxious effect upon the puerperium. Burkhardt's investigation could not verify this statement.

It was further noted that antiseptic douches administered during the latter months of pregnancy would often change the abnormal secretions into a healthy discharge. Nevertheless during labor vaginal douches are strongly opposed. They are advocated only in cases with pathological secretion in which

operative interference becomes necessary.

S. Lode: The Transmission of the Ovum from the Ovary to the Tube (Archiv für Gynäkologie, Band xlv., Heft 2).— Lode first repeated the experiments of Kehrer and Pinner, injecting an emulsion of charcoal into the abdominal cavity of rabbits, and, like these authors, he was able, after a few hours,

to demonstrate charcoal particles in the opened tubes.

He next substituted ova of animals for the emulsion, using the ova of ascaris lumbricoides suis. After a lapse of twelve hours large numbers of these ova could be seen in the dissected tubes. These investigations prove that the ciliary currents can propel the ova, not only from the ovary to the tube, but also from the abdominal cavity. They show that the fimbriated extremity of the tube need not be in contact with the ovary during the expulsion of the ovum, and that the external migration of the ovum is certainly possible.

J. R.

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ORIGINAL COMMUNICATIONS.

MECHANISM AND TREATMENT OF COMPLETE PROCIDENTIA UTERI.

 $\mathbf{B}\mathbf{Y}$

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(With thirty-three illustrations.)

In this paper the term "procidentia uteri" will be used to denote the condition in which the uterus itself, escaping from the vagina, appears outside of the vulva. The name "procidentia uteri," "complete prolapsus," "falling of the womb" has been criticised by those who have held varying views in regard to the normal and pathological anatomy of the condition, and think that "prolapsus of the female genital organs" would better express the condition.

It is difficult to find just the proper term, but, as there are many cases in which the uterus alone appears to have suffered displacement, we have thought best to cling to the old term, the reasons for which will be clearer after the discussion of the first part of the paper has been completed.

Owing to improved methods of gynecology and a more conscientious and careful midwifery, cases of complete procidentia are less frequently met than formerly. They are for the most part found among the laboring class of women who do heavy work and carry heavy burdens. In the last ten years, and among the large number of cases the observations of which form the basis of this paper, the writer has seen only one case outside of dispensary practice, and that occurred in a woman whose wealth came to her after a laborious early married life.

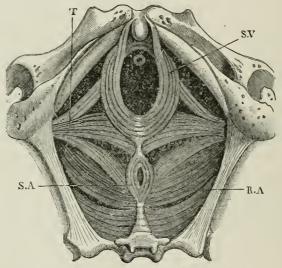


Fig. 1.—Muscular layers of pelvic floor. (Trelat.)

The subject of complete procidentia uteri will be treated as follows:

Part I. Some considerations of the anatomy and physiology of the female pelvic organs in their relations to uterine support.

Part II. Mechanism of downward displacements.

Part III. Treatment of complete procidentia uteri.

PART I. ANATOMY AND PHYSIOLOGY OF THE FEMALE PELVIC ORGANS IN THEIR RELATIONS TO UTERINE SUPPORT.

It is doubtful if there is a chapter in the anatomy of the human body in which so much confusion and diversity of opinion are to be found. The thousands of cases of laparatomy which have been performed in the last decade have given a precision and a scope to the knowledge of the anatomy of the abdominal cavity which without this wide vivisection could never have been attained, and the beneficent influence of which in thus extending knowledge may be reckoned as perhaps a greater harvest than the relief of the conditions which called originally for surgical interference. There is, however, no such clear and recognized knowledge of the pelvic contents of the human female below the diaphragm of peritoneum which separates its

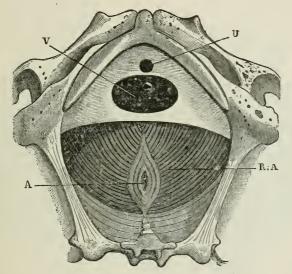


Fig. 2. -Muscular layers of pelvic floor. (Trelat.)

contents from the abdominal viscera above. It is not that the subject has not been thought of and written about. In the last eight years, since there has been a more general resort to surgery to correct long-standing uterine displacements, the anatomical and physiological relations of the pelvic organs have been much in the mind of operators, and scarcely a paper has been written upon the subject but what has been prefaced, as is this, with a chapter upon these relations, since it is the only logical way of entering into a discussion of the matter; for it is only with a clear understanding of the author's views of these fundamental facts that an understanding of ultimate conclusions is possible. The work of a proper investigation of the anatomy

and physiology of the pelvie organs of woman is stupendous, but it should be undertaken at no late date. It would be most difficult and costly, both in regard to time and money. It has not been thoroughly undertaken since the classic work of Savage, which has been the authority and resource of writers on this subject, and the plates of which have been reproduced in articles and pamphlets for now more than fifteen years. It is now out of print, but the echoes of it will sound through the coming years until it is replaced by a greater work which the advanced ideas and opportunities of to-day render possible. I could wish for the power of placing before the

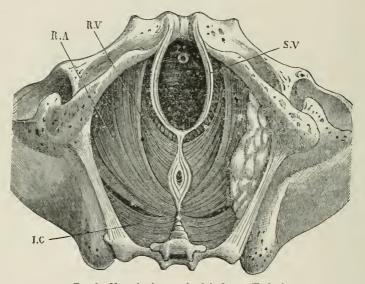


Fig. 3.—Muscular layers of pelvic floor. (Trelat.)

readers of this paper such research—the sections of frozen cadavers, the careful dissections, the delineations of operations, drawn and colored to the life by intelligent artists, and at the same time a resurvey of all physiological work that has been done, and a wider and more careful investigation than has ever been done. All gynecologists would be more sure in their undertakings, and relief of pathological conditions would be more speedy and certain. Unable at this time to do this, I must be content to gather together the diverse materials as they are to be found in works on gynecology and papers up to date, and, uniting them with a clinical experience, make the deduc-

tions which in the present state of knowledge the facts seem to warrant.

The anatomical structures which come in for consideration in relation to uterine support are: 1. The floor of the pelvis.

2. The vagina and cellular tissue.

3. Uterine ligaments.

1. Floor of the Pelvis.—The special anatomy of the floor of the pelvis, owing to its connection with obstetrics and its greater accessibility, has been more fully studied. There has been some difference of opinion as to what should be included in the so-called "floor," Symington defining it "as not merely the mus-

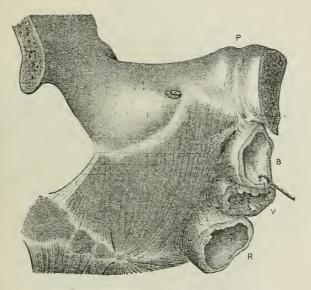


Fig. 4.—Muscular layers of pelvic floor. (Savage.)

cular diaphragm, but the whole of the soft structure which closes the inferior outlet of the female pelvis. There is no difficulty in defining the lower limit of the pelvic floor, which all admit is formed by the skin. With the upper boundary the case is different." The question arises whether the bladder should be regarded as forming an important portion of the anterior part, as Berry Hart insists, or as including both rectum and bladder, which Henry C. Coe says the term properly includes. The matter would not be of special importance except as bearing upon the nomenclature of prolapsus uteri in its complete form, and the distinction which some writers make, which has already

been alluded to. This matter will be referred to again further on. It suits the discussion of the subject better to consider the pelvic floor, as does Symington, as not including the organs which are in such close relationship to it.

The aponeurosis, muscles, and the "perineal body" are the portions of the pelvic floor which come in for discussion in the matter of uterine support; and opinions vary in regard to this, from that of Emmet, who is quoted as saying "it would be as rational to assume that a man's pantaloons were supported by

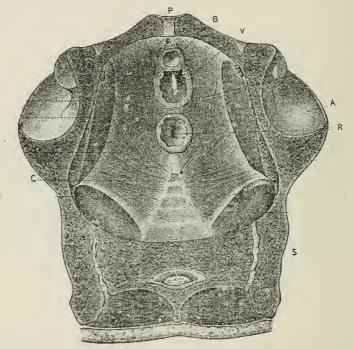


Fig. 5.-Muscular layers of pelvic floor. (Savage.)

the leg resting on the instep or foot," to Herman, who says that the uterus is supported by the pelvic floor as a whole, and any displacement of the uterus is due to disease of the muscular and fibrous structures generally. There are few who support Emmet's theory entirely, but its enunciation has done its work, and in the last five years there has been a modification in the extreme importance attached to the perineum in its capacity as a uterine support. Trelat, Van de Warker, Coe, Mundé, Thomas, Schröder, and a host of others, include the perineum

as one of the uterine supports, if not the most important. The words of Symington sum up this feeling: "The most obvious function of the pelvic floor is support of the superimposed viscera. This is especially true in the human being, owing to the upright posture, which brings the pressure of all the abdominal viscera from the ventral walls to the pelvic floor."

2. The Vagina and the Cellular Tissue.—There is little to which to call the attention in the way of special anatomical considerations which are in dispute in regard to the vagina itself. The intimate relation of the anterior wall, by means of con-

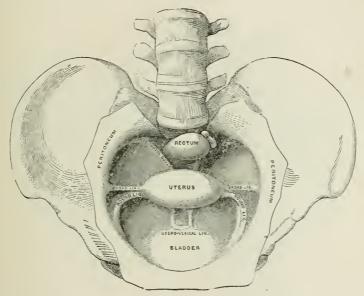
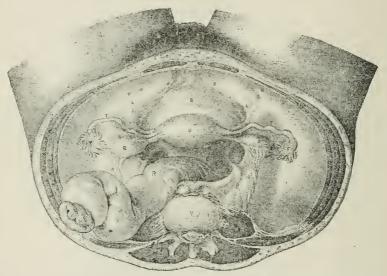


Fig. 6.—The reflections and pouches of the pelvic peritoneum. (Hodge.)

nective tissue, with the posterior wall of the bladder, and the fact that the relationship between the rectum is not so intimate, has been dwelt upon in its relation to uterine prolapse and made a gauge of the relative frequency of cystocele and rectocele. A matter of discussion also is its relations to the muscular layers which form the floor of the pelvis, more especially with reference to the levator ani. This will be discussed further on. The relation of the vagina to uterine support is indeed debatable ground. A few citations will show the trend of it. Gallet and Nicolctis affirm if all the ligaments are carefully cut the uterus still remains in position, held by its attach-

ments at the junction of its neck with the vagina. Hohl says the vagina does not support the uterus. Cut the vaginal insertions and perineum of the cadaver, and no sudden change of the body of the uterus occurs; it is supported by the ligaments. A number of gynecologists think that the uterus is sustained by the vaginal column, because of the angle at which it is placed with it; for in descent of the uterus this angle is lost, and, as one expresses it, "a free passage is thus made for that organ toward the vulva."

Van de Warker's remarks are among the most interesting on this subject, and are based upon a number of experiments upon



 ${\rm Fig.}~7.{\rm -Uterine}$ ligaments, and relation of bladder and uterus with reference to uterovesical ligaments. (Savage.)

his patients. In regard to the action of the vagina, he says that the upper part partakes of the uterine movements. Any force the vagina may oppose to the normal or abnormal descent of the uterus by reason of its cellular processes does not belong to the vagina itself, but resides in pelvic cellular tissue connecting it with the adjacent organs, and in this sense the rectum and the bladder are sustaining organs of equal value. The sustaining power of the vagina, then, resides in muscular and elastic structure, and the contractility of the vagina is the measure of its relation to the uterus as a supporting column.

3. The Ligaments.—If great has been the diversity of opinion

in regard to the perineum as a support of the uterus, greater has been that in regard to the vagina, but greatest of all is that relative to the ligaments. That the ligaments are composed of folds of peritoneum all perforce must be agreed, but the amount of muscular fibre attributed to each varies according to the individual desire of the writer considering them to attribute efficacy and contractility to them. The anatomical relations of the ligaments are quite definitely settled, with the exception of the utero-vesical.

(a) Utero-vesical Ligaments.—The utero-vesical ligaments, or anterior ligaments according to Signoret, are only simple peritoneal folds which seem to be attached to the bladder to support

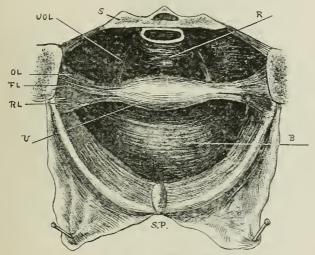


Fig. 8.-Uterine ligaments. (Tilleaux.)

the neck. In many women they do not exist except in a very rudimentary state. They disappear on the slightest traction, and their action on the direction of the uterus is almost *nil*. Sappey and Tilleaux deny their existence, while other authors hold that they are important structures in reference to uterine position. The diversity of these opinions is best seen by reference to Figs. 6, 7, and 8. Hodge depicts them equalling very nearly the utero-sacral, while Tilleaux and Savage do not represent them at all.

(b) Broad Ligaments.—Sappey considers the broad ligaments, since they are so rich in muscular fibre, as simply an expansion of the lateral parts of the uterus. According to him and Tilleaux,

in pregnancy the uterus expands at first between its two folds, until finally the ligament itself becomes obliterated, to be reconstructed after confinement. If this does not take place perfectly there is a relaxation of them, and uterine prolapse is the result.

Malgaigne does not think that they prevent prolapsus. Richet thinks that if they do it is in a secondary manner. According to Signoret they oppose lateral deviations of the uterus, which opinion is held by many others. Sappey says that when the bladder fills it turns back the anterior layer of the broad liga-

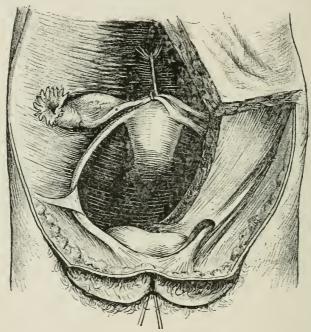


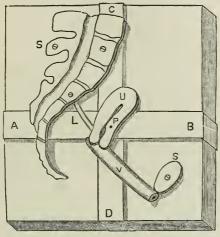
Fig. 9.—Round ligaments. (Tilleaux.)

ment. The anterior layer holds it while the posterior layer relaxes. In a measure, as the bladder is emptied, the anterior layer relaxes, and the posterior portion prevents it from falling in front. The round ligament contributes to lead it forward after the bladder is emptied, and permits it to take its normal position.

(c) Round Ligaments.—Since Alexander's operation has become so well known and so often performed, the almost unrecognized round ligaments have had an importance attached to them, and their dissection has so often been made that they are

among the best known, anatomically, of any of the constituent parts of the pelvis.

Their value and their action, however, are as much a diversity of opinion as those of any of the other ligaments. Kellogg, who has performed nearly a hundred operations for shortening these ligaments and seems to have made them a great study, thinks that they are of great use because of the amount of voluntary muscular fibres present, which respond by contracting to electricity, which he has proven by experimentation. He thinks that they have both an active and passive function. He finds them stronger according to the physical development of women.



[Fig. 10.—Diagram showing action of utero-sacral ligaments. (Foster.)

The great strength of these ligaments has been tested by Polk, who found that they would stand a tension of four or five pounds. Alexander himself does not claim a sustaining function for them. The shortening of them, he says, brings the uterus into position and permits it to regain its normal relations. Tilleaux thinks that the round ligaments oppose descent by maintaining the uterus in its obliquity to the axis. Burnir demonstrated on the cadaver:

- 1. If the subject is placed in a vertical position, with bladder and rectum moderately distended, there is no alteration of the ligaments, round or otherwise.
- 2. If the bladder is emptied and the rectum filled, the sacrouterine ligament is stretched, round ligaments relax.

- 3. If bladder and rectum both are empty, the intestines accumulate before and at the back and the ligaments remain in a state of repose.
- 4. If the rectum is empty and the bladder is full, the tension of the round ligament is proportional and the utero-sacral ligament is relaxed.
 - Dr. E. Stow Brown, after her research into the matter, thus



Fig. 11.—Case of complete procidentia uteri in a young unmarried woman.

summarizes conclusions in regard to the round ligaments: "They prevent the uterus from slipping too far back; aid in preventing the entire prolapsus of the body; in parturition they fix the uterus, maintaining it in due relation during the pains of labor."

Aran regards them as the only true ligaments of the uterus.

(d) Utero-sacral Ligaments.—The utility of the utero-sacral ligament is less disputed than any of the others. Its anatomy, as set forth in the text books, also remains unchallenged. Its action in conjunction with the round ligament has already been

referred to. The two suspend and fix the neck, say Signoret and Tilleaux. Cutting these ligaments, the uterus changes its position immediately, and a sudden movement causes it to fall into the hollow of the sacrum. Such is also the opinion of Legendre, Bastien, Richet. MM. Legendre and Richet say that a weight of fifteen to twenty kilogrammes is necessary to bring the uterus to the vulva, and that the whole pelvic vault is lowered. When these ligaments are cut, much less force is required to drag the uterus to the vulva. Foster also believes in the utero-

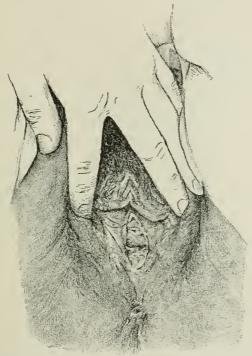


Fig. 12.—Condition of perineum after uterus was replaced in case Fig. 11. The ring of the hymen is stretched, but not broken.

sacral ligaments as chief supporters of the uterus. The accompanying sketch (Fig. 10) illustrates his idea, and he has many followers. In opposition to these views I refer again to those authorities, already mentioned, who do not think that any of the ligaments play a rôle in the matter of uterine support.

PART II. MECHANISM OF DOWNWARD DISPLACEMENTS.

Having presented to the reader the chaotic mass of theories in brief, as I have extracted them from an enormous amount of

dissertations in French, English, and German text books and periodicals, I come now to the task of analyzing these conditions and the bearing that they have in the production of the condition of complete procidentia. The conclusions are based on accepted anatomical facts [and clinical experience, and, while not able by any means to elucidate all the complex conditions which surround this vexed subject, it is trusted that the experience may not be without its value.

I propose to discuss the mechanism of displacements in the



Fig. 13.—Showing complete prolapsus of anterior wall and bladder. Case illustrates type of complete procidentia in which cystocele predominates.

same order that I have discussed the anatomical and physiological considerations which bear upon the subject. Various other theories will present themselves, as also, incidentally, some mention of the etiological factors.

1. What has the pelvic floor to do with the mechanism of descent? Very little, if anything. It is surprising how long this opinion has been held, even by the cleverest of observers. Before Emmet had enunciated his views in regard to the complete independence of the perineum of any function of support

I had arrived at the same conclusion, and I think that some of the photographs' which illustrate this paper had been taken. I am positive that they were before I knew of his theories.

That the perineum is not concerned in uterine support is proven, in the first place, by the occurrence of complete procidentia in those whose perineum has never received the slightest injury. Qvisling reports a case of complete prolapsus in the new-born; another case is cited occurring in a child $2\frac{1}{2}$ years old. Thomas, in his clinical cases, reports two instances of the trouble in two unmarried women, and Mundé and European observers

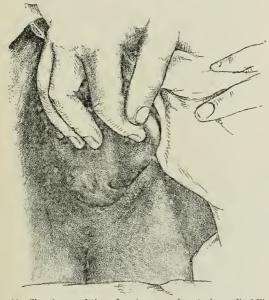


Fig. 14.—Showing condition of perineum and posterior wall of Fig. 13.

have also. Figs. 11 and 12 are from a photograph of a case of my own, that of a young unmarried woman who was about 25 and gave no history of exertion, or anything to account for the prolapsus. The body of the uterus was outside of the vulva. It was small. It was easily replaced, and it can be seen that even the hymen had not been torn, only stretched by the procident uterus. Figs. 13 and 14 show a case of complete procidentia in which the prolapse of the anterior wall is greater than that of the posterior wall, the perineum, even to the fourchette, remaining intact. Figs. 15 and 16 show a case of the other type,

¹ The writer desires to acknowledge the kind assistance of Dr. C. B. Kelsey in taking some of the photographs.

where the prolapse is more of the rectal wall, and yet the peri-

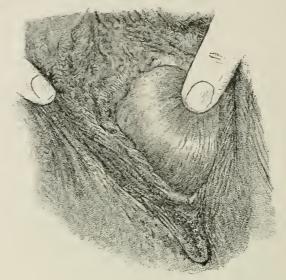


Fig. 15.

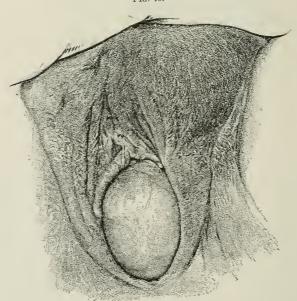


Fig. 16.

Figs. 15 and 16.—Showing prolapsus of posterior wall. Bladder and anterior wall comparatively undisturbed. The uterus has been partly replaced to show the condition better.

neum is not injured, beyond the stretching which came_from

such a large body wearing upon it. This, I believe, has occurred so often that the injury consequent upon the condition, and caused by it, has come to be regarded as the cause.

I am aware that there are cases of partial laceration of the perineum, cases of the second degree, which from the appearance of the integument would not be suspected. The cases which I have had, and those whose photographs are shown, had a firm perineum, with no suggestion of the internal laceration of which Trelat and others speak. The most convincing proof

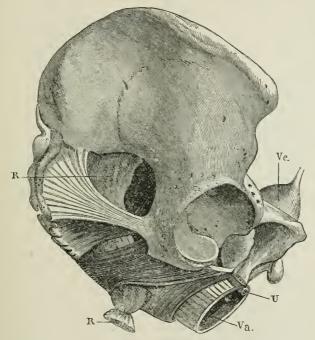


Fig. 17.-Relations of levator ani muscle to vagina and rectum. (Trelat.)

of all is the fact that in cases of complete laceration through the sphincter, prolapsus uteri, even in the second degree, is rarely seen, and I have yet to meet a case where the procidentia of that organ is complete. Emmet reports this as his experience also. As the reason of this is found in connection with the relation of the vagina to the mechanism of prolapse, we will discuss it in that place.

2. What has the vagina to do with the mechanism of descent? I believe that it can have both an active and a passive rôle, cspe_

cially in the multipara. By glancing at Figs. 1, 2, 3, 4, and 5, which show the muscular layers of the perineum, it will be seen that the rectum, urethra, and vagina are thrust through the muscular layers. Especially is this true of the vagina. Aside from the fibres of the sphincter or constrictor vaginæ, the only muscle which has any very intimate relation to it is the levator ani. A band of this muscle (Fig. 17) is thrown around it at about the beginning of the middle third. It is seen best in a cross-section in the plate of Savage, Fig. 18. This fasciculus is what is lacerated most frequently. It seldom escapes when the laceration is of the third degree. The union thus being severed between the vagina and the rectum, the posterior wall is not dragged down by every act of defectation and therefore escapes

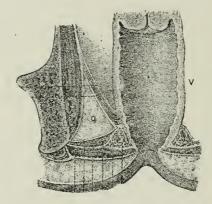


Fig. 18.—Cross-section showing bands of muscular tissue from the levator ani going to vagina. (Savage.)

prolapsus. This was very perfectly demonstrated in the case of a woman whose perineum was lacerated through the sphincter. She was three months pregnant, and yet with this heavy uterus there was not the slightest sagging of the posterior wall, even when standing. But let the sphincter ani remain intact, and a portion of the perineum, greater or less in extent, and this vaginal portion of the levator muscle be ruptured (Figs. 15 and 16), the unantagonized action of the rectal portion will occasion a heavy dragging of the posterior vaginal wall, so that if there is a tendency to procidentia uteri it will generally go on to completion. Here, I think, is found the key to the condition, and not, as has been supposed, in the perineum or perineal body. It seems to me that any one can plainly see that such is the case

by studying the anatomical relations and uniting with it clinical

experience.

Is the prolapse of the vagina which must occur in a greater or less degree in every case of complete procidentia a concomitant or a cause of the trouble? Where it occurs in the nullipara I believe its rôle to be entirely passive. It is well illustrated in the forced traction, as shown in Savage's plate (Figs. 19 and 20). The intimate union of its walls, by means of connective tissue, to the bladder in front and the rectum posteriorly, makes those

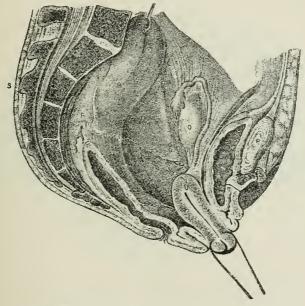


Fig. 19.-Mechanism of descent caused by traction. (Savage.)

organs responsible for much of the prolapsus of the vaginal walls, as the numerous cystoceles and rectoceles testify, any number of which exist without the uterus descending in the least from its normal plane; but if the sustaining forces of the uterus be weakened it can become an active power, pulling down the uterus by degrees until it appears outside of the vulva. Most interesting in this connection are the experiments of Demelin, who found that all the connective tissues were softened and relaxed during pregnancy, so that, without tearing, the separation of the walls of the neck of the uterus from the bladder could easily be accomplished. Hofmeier found a case of

Schröder's in which the bladder was completely detached from the neck of the uterus. In pregnancy the attachments of the bladder to the uterus relax so completely that they do not, so to speak, exist. If in the process of subinvolution the reconstruction of these attachments fails to take place, the vaginal walls descend, dragging with them the uterus, the vaginal walls in their turn are pulled upon by the bladder and the rectum as they perform their functions; the predominant action of the one or the other determining the form of the prolapse, a cystocele or a rectocele, or, where the traction is equalized, both ante-

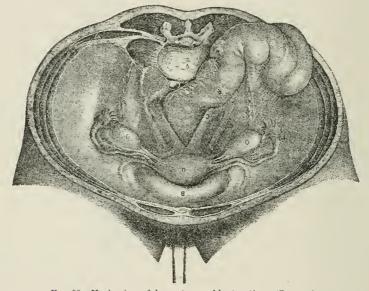


Fig. \$0.—Mechanism of descent caused by traction. (Savage.)

rior and posterior walls come down equally together (Figs. 21 and 22, also Fig. 23).

There is another mechanical relation of uterus to the vagina in which the rôles are reversed. The uterus acts to tear away the vaginal supports and pushes its walls down before it, loosening beyond repair the upper portion of the vaginal attachments. I refer to those cases of labor in which there is a great expulsive effort before the os is dilated. The head of the child, capped by the lower segment of the uterus, descends almost to the vulvar orifice before the dilatation is complete, and with this comes a great expulsive force, under which pressure the cervicovaginal attachments, as well as those of the bladder, must give

way. As a general thing the labors of those suffering from complete procidentia are not difficult, but are rapid, bringing down the vaginal walls in their progress. A case which illustrates the effect of a swift and uncared-for confinement was that of a woman, 38 years old, who was taken in the middle of the night with the pains of labor. She was a primipara and did not know that her pains were those of childbirth. She sat upon the edge of the bed, smothering her feelings, fearful lest she should disturb any one in the large boarding house where she was staying, awaiting the time to go to a hospital for her con-

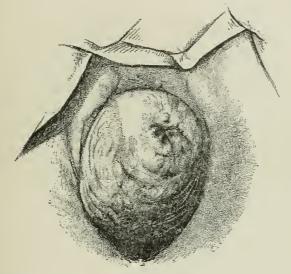


Fig. 21.—Prolapse of vaginal walls, both anterior and posterior. The uterus was retroflexed. Patient, 33 years old, had had twelve children.

finement. The child came, and she wrapped it up in an old skirt, took a carriage without letting any one know, and appeared at the hospital with the placenta still undelivered. She made a good recovery, but a year after she had complete prolapsus and was obliged to have Le Fort's operation for relief.

That the vagina may be the aggressor in cases of complete prolapsus is also demonstrated by its action on the cervix. In those cases where there is vaginal traction and the uterus still maintains its position, there results a lengthening of the cervix which in some cases goes on to an enormous extent. Fig. 28, from Barnes, shows this lengthening of the cervix without the

dragging away of the uterus. If the supports of the latter are weak and cannot resist the continued traction and downward action of the vagina, the body descends before the cervix is elongated.

Is the vagina a supporting column to the uterus? Foster, as has been said, shows a diagram (Fig. 10) to represent the anterior wall of the vagina as having this action, assisting the utero-sacral ligament in its work above by forming a support from below. Van de Warker also believes in this columnar action of the vagina. Other writers state that the action of sup-

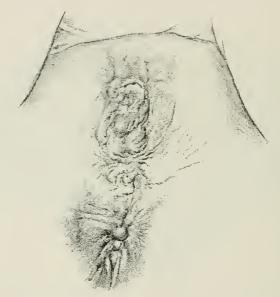


Fig. 22.—Showing condition of perineum of case Fig. 21.

port is due to the angle which the uterus maintains with the vagina. From diagrams and reasoning this sounds plausible, but clinical experience reveals any number of congenital cases in which this diagrammatic relationship is not maintained and no trouble in the way of descent of the organ ensues. The backward displacements are a more striking demonstration of this.' This, together with the action of the vagina upon the cervix, causing its enormous elongation and descent without bringing about the descent of the body itself, are proofs, it would seem, that while the vagina may act as a columnar support to the uterus

¹ See notes accompanying Figs. 29, 30, 31, and 32.

and maintain it in place, both in this manner and by means of its position toward it, this is not always the case.

3. What have the ligaments to do with the mechanism of descent? This is the most difficult question of all. It is natural to suppose, from the very name "ligaments," that they have something to do with uterine support and that their rôle is active rather than passive. Yet it should be borne in mind that, because of the great changes which must take place at the time of pregnancy, these ligaments must necessarily be in such a condition as to permit of the greatest mobility of the organ, which

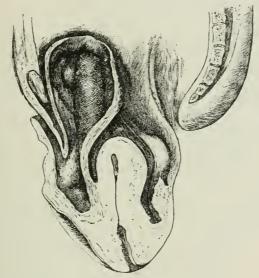


Fig. 23.—Section showing the relation of uterus and vaginal walls, as well as rectum and bladder, in complete descent. (Barnes.)

in nine months can enlarge to such an enormous extent, and after confinement return in less than two weeks to very nearly the original three inches of its normal size. The experiments which have been made to show the action of the various ligaments have already been considered. True, many of these were performed upon the cadaver, in which the contractility and elasticity of life were not present; nevertheless I cannot think them worthless as showing the action of the ligaments on their normal plane. The evidence in regard to their action as keeping the uterus from falling is conflicting. There is a consensus of opinion, however, that the utero-sacral ligament is the main

uterine supporter, and opposer of its descent. Its main action would be to maintain the uterus in its relation to the vagina, and this must be suspended in those cases, to which I have already referred, where the uterus is congenitally retroverted, and in many of those cases in which, as I have already said, no downward descent takes place.

The action of pregnancy on all these ligaments is to relax and extend them, so that after childbirth they must be entirely

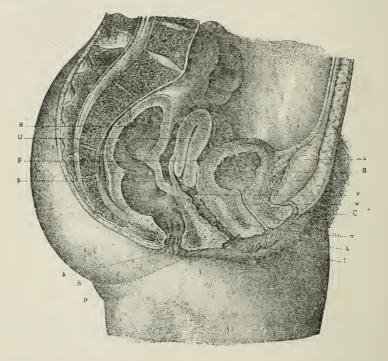


Fig. 24.—Vertical section showing relation of uterus and vagina to bladder and rectum. (Savage.)

reconstructed. If left in a state of subinvolution they surely would not oppose descent. The question is, would they facilitate it because of the lack of their sustaining action?

The traction of the uterus in its downward descent must pull upon the ligaments. In some cases I believe that individual ligaments yield to the traction. Signoret says that the uterosacral ligament is stretched and sometimes broken. I believe the ligaments are among the chief, if not the chief, factors in opposing uterine descent when the traction is from below, and

that in such cases one ligament may yield more than another; and, as the utero-sacral ligament is the shortest, it will show a greater effect than the others from traction. When the uterus sinks from its own weight or from pressure above, I believe the whole pelvic vault yields, as is shown in the plate of Savage, where forcible traction accomplished the complete prolapsus (Figs. 19 and 20).

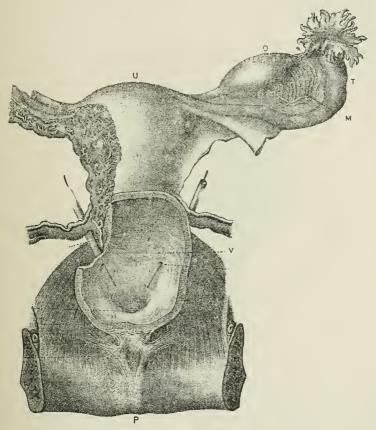


Fig. 25.—Vesical relations to uterus and perineum. (Savage.)

4. Various other factors to be considered in relation to uterine descent. Aside from the structures which we have considered, and which from their intimate relations with the uterus are more or less actively or passively concerned in its procidentia, several other important facts should be reviewed. Foremost among these the subtle phenomena of intra-abdominal pressure should

be considered. This force is constantly acting. It is more powerfully exerted in coughing, lifting, and in defecation and urination. The extent of this pressure at the time of the expulsive effort of the last stages of labor is exceedingly great. It varies also in different individuals, acting without the volition of the individual. It is often demonstrated on the gynecological table by the expulsion, more or less forcible, of pessaries or speculi. It is this force which returns the replaced procident uterus to its former position outside the vulva while the patient is still in a recumbent position. In normal conditions there is a balance between this force and outside forces, so that it does not

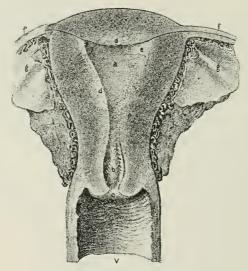


Fig. 26.-Junction of cervix and vagina.

act to cause the downward displacement of the uterus, even with the force of gravity to aid it and a downward stress of the vagina. If the lacerated perineum has any connection whatever with the prolapsus of the uterus, it must act by opening the vaginal canal and disturbing the balance between the internal and external relations of pressure. The whole forms a question most delicate and intricate, in pelvic physical dynamics, which has not yet been solved.

Renter speaks of the variations in the pelvic angle which make the pelvic inclination greater in some than in others. Nature having given this tendency in some to prolapsus uteri,

no operation will overcome it. He thinks that the benefits of massage lie in the recognition of the fact that the trouble is in the pelvis and not in the floor.

Emmet's theory is that there is insufficient support to the blood vessels through disease of the pelvic connective tissue, and consequent disturbance of the circulation, which results in prolapsus. That the disturbances of the circulation are very great, leading to venous stasis, alterations of tissue, and the like, is very patent, but it would seem an outcome rather than a cause of the condition.

Duncan and Hart, as well as others, think that the loss of fat should be considered as etiological. Fat in the anterior abdominal wall, and also the presence of fat in the perineum, will assist

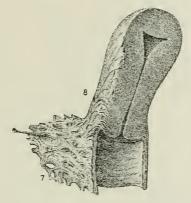


Fig. 27.—Junction of cervix and vagina, showing connective cellular tissue. (Savage.)

in preventing the descent of the uterus. Most of my cases were very stout; this can be seen by reference to the photographs. I cannot think that this has anything to do with it, except that such patients are not apt to have a laxity of tissues, which is one of the concomitants of uterine displacements in some cases. In this connection the relation of heredity of laxity of tissues has been considered by some, and pedigrees of several generations set forth, showing that hernia has occurred in the male and complete procidentia in the female. This, of course, is a different point from the general classification of complete prolapsus as a species of hernia.

Is uterine prolapsus of the nature of a hernia?

According to Hart (Fig. 33), Duncan, Vallin, and a number

of others who have adopted these views, it should be so considered. I cannot think so. In complete prolapsus the pelvic vault descends and the mass of intestines follow by force of gravitation. There is no protrusion of the abdominal contents, no forcing of the intestines into unusual channels—as, for instance, when they are forced through the inguinal ring. Hart claims that oftentimes a loop of intestines can be found normally in Douglas' pouch. Winckel gives a section of the pelvic organs of a woman who had had complete prolapsus, and remarks that there

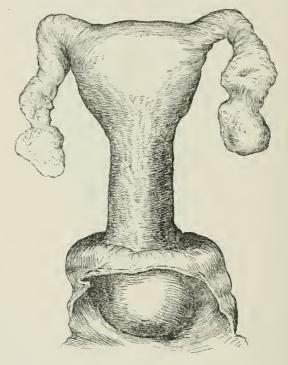


Fig. 28.—Hypertrophy and elongation of the cervix without descent of the body of the uterus. (Barnes.)

was some of the small intestines in Douglas' cul-de-sac, as if it were not a usual occurrence. To consider these cases of complete prolapsus as herniæ tends to confusion of the pathology. And true herniæ of the uterus do occur; several are cited by Courty where the organ has been found in the hernial sac outside of the abdominal ring. I do not feel that anything is gained in the knowledge of the mechanism of the prolapsus of the pelvic

organs in speaking of them as of the nature of a hernia. The points of resemblance are illustrative rather than essential.

SUMMARY AND CONCLUSIONS.

I. The pelvic floor has little to do in causing complete proceedentia. The proofs of this are: 1. It occurs in children, in young women, without so much as destroying the hymen.

2. It is rarely if ever seen in cases of complete laceration of the perineum.

II. The vagina may have both an active and a passive action in the mechanism of descent. If the band of levator ani muscles

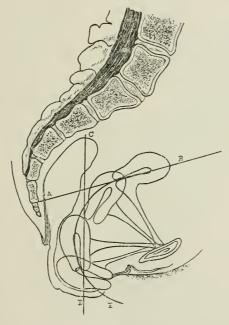
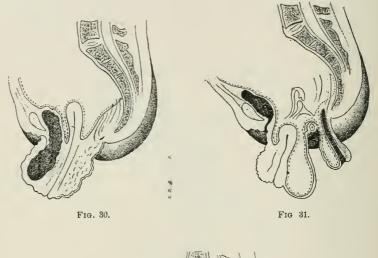


Fig. 29.—Mechanism of descent. (Barnes.) Barnes claims that backward displacements, from the nature of the case, are more common than any other.

which surrounds its tube in the lower third is lacerated, and its lower portion is still held by the rectum, the muscles surrounding it act with a powerful traction to bring down the posterior wall of the rectum; this traction, with traction of a like nature on the part of the bladder, causes a prolapse of the vagina alone if confined to the lower portion, but when it involves the upper portion there is dragging of the neck of the uterus, which, if

the uterine supports are not lax, results in the great hypertrophy and lengthening of the neck which simulates complete procidentia. If the uterine ligaments are relaxed the uterus will follow sooner or later. 2. The softening and relaxing of the connective tissue during pregnancy make the detachment of



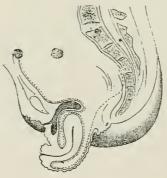


Fig. 32.

Figs. 30, 31, and 32 show mechanism of descent with forward displacement; Fig. 32, complete prolapsus with anteversion.

the utero- and vagino-vesical attachments an easy matter, rendering and predisposing to prolapsus. 3. The uterus can press down the vagina before it, making the vagina a passive agent in cases of rapid labor when the os is not dilated and the uterus descends toward the vulva with expulsive force of the third

stage; also when it is heavy from lack of involution, as when the patient gets up too soon after confinement, or when subinvolution does not take place. 4. The vagina affords support to the uterus by its attachments to its neck (see Fig. 25); but it is a question whether it acts as a supporting column in the mechanical sense expressed by some writers, and whether the angle it forms with the uterus has a supporting value. Clinical experience shows many cases in which the walls of the vagina bulge and are prolapsed, in which the uterus retains its position, and

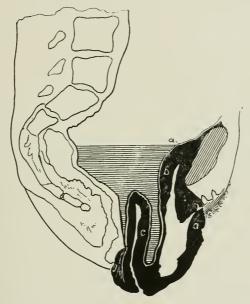


Fig. 33.-Diagram showing hernial nature of complete prolapsus. (Hart and Barbour.)

also many cases, notably cases of congenital retrodisplacements, in which the uterus remains at its normal plane.

III. The action of the ligaments is more passive than active. They are naturally lax owing to the necessity of uterine movements and uterine growth in pregnancy. If traction occurs from below, and the ligaments are lax, descent of the uterus is more facile. 2. The importance of the utero-sacral ligaments is exaggerated by most writers. 3. The appearance of the ligaments in cases of prolapse does not show their action; the stretching, breaking, and elongating is the result of the displacement, not the cause. In this respect experiments on the cadaver may

be trusted for displacements of the uterus on the normal plane, but not in descent.

IV. The greatest factor to be considered in uterine displacements, and the least understood, is the intra-abdominal pressure. In the normal state there is such an adjustment of this that the uterus is easily maintained in position with little aid from ligaments, vagina, or perineum, in spite of weight of abdominal viscera or the great and constantly recurring force of expulsive effort. When this equation is disturbed descent becomes easy. The maintenance of the uterus in its normal position is more a matter of physico-dynamics than is generally supposed.

V. Owing to laxity of tissues, inherited or the result of disease or subinvolution, there may be a greater predisposition to procidentia uteri. The loss of fat has nothing to do with it, cases occurring very frequently in women with great accumulations of abdominal and other fat. The shape and inclination of the pelvis may also favor this condition. Some writers think that too much is attributed to the effects of pregnancy as an etiological factor. Owing to its relaxing effects on all the ligaments and connective tissues, the heavy uterus of subinvolution, and insufficient care, it can, in my estimation, be held responsible for ninety per cent of the cases.

(To be continued.)

THREE YEARS' EXPERIENCE WITH THE ELECTRICAL TREATMENT OF FIBROID TUMORS OF THE UTERUS.

WITH A REPORT OF FORTY-FOUR CASES.

BY

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MAY 9TH, 1891, I had the honor to read before this Society a paper on the technique of the Apostoli method of treatment,

¹ Read by invitation before the Obstetrical Society of Boston, January 13th, 1894.

and announced at that time my purpose later of reporting results. In a paper published in the Boston Medical and Surgical Journal for June 16th, 1892, I gave some results in the treatment of pelvic inflammation. I wish now to give results in the treatment of fibroids.

My interest in this subject was especially aroused by a visit to Apostoli at his clinic in Paris in the summer of 1889. Although I treated several cases of fibroids with electricity during the following year, it was not until the establishment of the electrical clinic at the Free Hospital for Women in this city, in October, 1890, that the opportunity was afforded me to apply electricity to any considerable number of patients.

It is now ten years since Apostoli first called the attention of the profession to the electrical treatment of fibroids. The subject is still under judgment, and it is my purpose in presenting this paper to add my mite toward the determination of the place that electricity should hold in the treatment of this very common disease with which women are afflicted. I approached my task in an unprejudiced frame of mind, having read, on the one hand, Apostoli's articles, and also the Keiths' book, in which they declared their intention to lay aside the knife in favor of electricity; and, on the other, the attacks of Lawson Tait and other abdominal surgeons on this therapeutic measure. I have tried not to be biassed and to give the treatment a fair trialto see facts as they are, and not as I should like to have them. The diagnoses are my own, though sometimes I have had the corroboration of such men as Drs. W. H. Baker, F. H. Davenport, J. B. Swift, F. W. Johnson, and the late Dr. C. P. Strong, all of whom kindly sent me cases. I want here to express my obligations to them and to the many other practitioners who have referred cases for treatment. The diagnoses have been confirmed by repeated examinations extending over months and often years, and under varying conditions.

During the three years from October 18th, 1890, to October 18th, 1893, I have seen in hospital and private practice ninety-eight cases of fibroid tumor of the uterus. Forty-four of these were treated with electricity and received at least six treatments each. I present the chief facts as to these forty-four cases in tabular form to-night. The cases treated with less than six applications have been excluded from consideration. No mention is made, also, of the cases of doubtful diagnosis. A number

were treated tentatively, and it has been only in those instances where the diagnosis was reasonably sure after numerous examinations that they have been included in the tables. In an experimental way were treated two cases of ovarian cystoma (diagnosis confirmed by celiotomy in one); a cyst of the broad ligament (celiotomy); a case of cancer of the uterus (microscopic examination of piece removed for diagnosis); a fibroid with malignant degeneration; and many cases of pus tubes, several verified by subsequent operation. I satisfied myself in these cases that electricity had no effect except in a majority to relieve pain. In a considerable number of the cases included in the tables I was favored in making a diagnosis by an ether examination, and in a few by an ether examination at the beginning and another at the end of treatment.

At the Free Hospital electrical clinic there were made during the three years 2,176 applications of electricity. Not all of these were to fibroids, as the clinic is for the application of electricity in the diseases of women.

For the details of treatment you are referred to my paper on the technique before spoken of. It was published in the Boston Medical and Surgical Journal for November 26th, 1891. I have followed Apostoli's methods rigidly, except in one particular, and that is, I have given vaginal galvanism in certain cases where experience taught favorable symptomatic results were to be expected, and where it was an anatomical impossibility to give intra-uterine treatment or impossible or inexpedient to puncture. The treatment was usually begun with vaginal application. Apostoli, as you know, claims that vaginal galvanism is useless.

A word as to instruments used. For battery, Law cells, forty-eight at the hospital and sixty-five at my office; for faradism, Waite & Bartlett's three-coil Dubois-Reymond apparatus operated by four Law cells; for galvanometers, the Gaiffe and McIntosh; for rheostats, the Bailey and Massey; for clay plate, that manufactured by Waite & Bartlett—clay in muslin, ten by twelve inches; for intra-uterine electrodes, platinum tips, one-inch and two-inch; for vaginal electrodes, a brass ball covered with thick layers of absorbent cotton and gauze; for faradism, the vaginal and intra-uterine bipolar electrodes of Apostoli; for puncture, the gold-tipped Apostoli needle. The measurements, both uterine depth and circumference of the abdomen,

have all been made with the same steel tape graduated in centimetres. Measurements of the abdomen were in every case taken with the patient lying on the back with knees bent and all clothing loosened.

The following measurements were taken: Circumference at umbilicus; circumference at largest part; distance from tip of ensiform cartilage to the umbilicus, from umbilicus to pubic symphysis, and from umbilicus to the anterior superior spine of the ilium on each side. And here let me say it has been a constant source of regret that exact measurements of the size of fibroid tumors cannot be made. The condition of fulness or emptiness of the intestines, bladder, and rectum, the varying thickness of the fat of the parietal walls and omentum, and the changing shape of the tumor with accompanying alteration in direction and length of the uterine canal, effectually prevent accurate measurements with calipers or otherwise. We have to be governed by tactile sense, and by repeated examinations under as nearly similar conditions as possible, before deciding on the relative size of a given tumor. The fact that fibroids are smaller just after the catamenia and larger during and just before, and also that they vary in size from day to day owing to temporary engorgement or depletion, has been forcibly impressed on me since I have followed up this subject.

The intra-uterine measurements were taken with the greatest possible precision, careful attempts being made to get the extreme depth in every instance; measurements with the steel tape direct from the sound or probe. The treatments have been made twice a week as a rule, and of an average duration

of from four to eight minutes.

Cleanliness and antisepsis have been the practice. For details I must refer to my former paper already alluded to. It has been my custom to give personal attention to the details, and I have myself examined all the cases and kept track of them from the beginning of treatment.

My aim has been to follow up the patients for as long a time as possible, in order to gain reliable information as to the permanency of results. Three years seems to be a reasonable length of time for an investigation of this sort.

In the tables the ° mark means milampères. Unless otherwise specified, the treatments are with galvanism. P is for positive, N for negative. F, M, and C are for fine, medium,

and coarse coils. The faradism is bipolar vaginal, unless some other form is indicated. In analyzing the results I shall consider the cases first from an anatomical standpoint—the increase or decrease in size of the tumor; and, second, from a symptomatic point of view—the effect on pain, hemorrhage, and general health.

Although forty-four cases are included in the tables, we shall consider only thirty-five in our analysis of anatomical results, for the reason that nine of the forty-four have either not had sufficient intra-uterine application, or have not been under observation what, to me, seems a proper length of time. The nine cases are Nos. 36 to 44 inclusive. Each of the thirty-five cases has had at least six treatments with galvanism, either intra-uterine or by puncture, and with intensities rising fifty milampères, and in addition has been under observation at least four months from the beginning of electrical treatment, a majority from one and a half to two years. When possible, and in most instances, I purposely refrained from prescribing tonics or any other treatment, local or general, so that the results might be fairly attributed to the electricity. In speaking of the symptomatic results I include the entire forty-four cases, except in estimating permanent benefit, where a minimum of four months under observation will be adhered to, thus limiting the number to thirty-five.

First, anatomical results—the effect of galvanism on the size of fibroids. Of thirty-five cases, nine, Nos. 1, 3, 7, 10, 14, 15, 16, 19, and 27, showed a decrease in size at the end of periods ranging from one to eight months from the beginning of treatment. But in six of these nine, Nos. 1, 10, 14, 16, 19, and 27, at the end of periods of time varying from one and a half to two and a half years the tumor was as large as at the beginning, or larger: Nos. 1, 10, 16, and 19 were larger, Nos. 14 and 27 were the same size. The other three, Nos. 3, 7, and 15, were lost track of in eight months, four months, and eight months respectively. That is to say, we have no positive evidence that any of the tumors were permanently lessened in size as a result of electrical treatment—a showing not at all in accordance with the published results of Apostoli and others. Seven out of thirty-five, Nos. 1, 4, 9, 10, 12, 16, and 19, were a little larger at the end of one and a half to two and a half years. Four of these were treated with galvano-puncture: No. 9 by puncture through the abdominal walls with two steel needles by Dr. Baker, a current of one hundred and twenty-five milampères for ten minutes being used; the other three were treated by vaginal puncture after the method of Apostoli. The seven cases had treatments in number as follows: No. 1, 50; 4, 49; 9, 40; 10, 18; 12, 20; 16, 13; and 19, 41. No. 4 increased a little in size in eight months and then remained stationary for a year and a half. In No. 10 a myomectomy was done and opportunity offered to measure the fibroid nodule exactly. Myomectomy was also done in No. 33 of my series. In No. 16 a hysterectomy was performed, the tumor proving to be rather soft from a predominance of the muscular elements. Deducting from thirtyfive the seven cases in which the tumor became larger and the three cases in which it was smaller when the patient was last seen, and we have left twenty-five as the number of cases in which the tumor remained of the same size.

It has been my experience that galvanism clears up pelvic inflammatory exudate and improves the physical condition of inflamed tubes and ovaries, unless there is pus present. A fibroid uterus, fixed and immovable, after treatment with galvanism becomes free; a mass in the pelvis made up of tube, ovary, and exudate disappears. Such a result was noted in seven of my cases, Nos. 1, 5, 8, 23, 27, 29, and 31. The only other change in the physical conditions that seemed to be due to electrical treatment was an increase in the panniculus adiposus of the abdominal parietes.

The uterine measurements show very little change as a result of treatment, in this respect varying from some of the results reported by other observers. Every effort was made to take the uterine depth always in the same manner. Fractions of a centimetre must be allowed for the tip of the probe going into a horn of the uterus, for its catching on a projection in the canal, and for uneven pressure on the crown of the cervix by the registering finger or forceps.

Intra-uterine applications of galvanism, positive, have a temporary curative effect on the endometritis of fibroids, but not a permanent effect. An illustrative case is No. 27, who had the most thorough intra-uterine treatment with positive galvanism. The large gas-carbon electrodes and high intensities were used with prolonged applications, the uterine cavity being accessible and carefully gone over from fundus to external os. One year

after the electrical treatment I curetted her and obtained abundant tissue, which Dr. F. B. Mallory, the pathologist, examined microscopically and said was from hyperplastic endometritis. No. 16, the case of hysterectomy, is another instance. When I laid open the tumor at the close of the operation, abundant soft, pink, velvety tissue, easily scraped off a glistening white surface, lined the entire uterine cavity; and, by the way, neither the pathologist nor I, after a careful search, could find any evidence of a cicatrix in the mucous membrane of the canal.

Cervical stenosis following high intensities has occurred in many of my cases. It prevents subsequent treating the interior of the uterus with large electrodes. It has not caused dysmenor-rhea in my experience, and the stricture has never been so tight as to prevent the passage of a probe. In using high intensities it has been my aim to get the tip of the electrode as near the fundus as possible, to obviate the annoyance that might result from a stricture low down.

Second, the symptomatic results. It has seemed simplest and best first to classify the thirty-five cases under four headings, as follows: I., those that were relieved of pain permanently; II., those that were relieved of flowing permanently; III., those in whom there was improvement of general strength and ability to work; and, IV., those that experienced no permanent benefit. Of I. (those relieved of pain) there were eleven cases, Nos. 1, 2, 4, 9, 14, 15, 18, 19, 21, 22, and 25, out of nineteen cases in which pain was a prominent factor. Of II. (those relieved of flowing) there were seven cases, Nos. 4, 5, 8, 12, 30, 31, and 32, out of twenty-three cases in which flowing was a prominent symptom. Of III. (those improved in general health and ability to work) there were twenty-one, Nos. 1, 3, 4, 5, 6, 9, 11, 12, 15, 17, 18, 20, 21, 22, 23, 24, 27, 29, 30, 31, and 32, out of twenty-five cases where relief was possible. Adding these figures together, and subtracting twelve for numbers inserted more than once, and we have twenty-seven as the number that received symptomatic benefit. The remaining eight of the thirty-five, Nos. 7, 10, 16, 26, 28, 33, 34, and 35, come under heading IV. as having received no permanent benefit. If we analyze the eight cases of IV. we find that four of them may be classed as having received temporary relief. Nos. 10, 26, and 33 were relieved while under treatment, but became as bad as

ever when the treatment was stopped. No. 7 complained only of sterility.

Looking now at temporary symptomatic benefit, we may include the entire forty-four cases in the tables. Of the thirty-five just considered we found there were four who were not benefited at all either permanently or temporarily. In the remaining nine of the forty-four, Nos. 36 to 44 inclusive, three received no benefit (they were Nos. 39, 41, and 44), and six, Nos. 36, 37, 38, 40, 42, and 43, were benefited. That is, thirty-seven out of forty-four cases treated, or eighty-four per cent, experienced relief of some sort as a result of electrical treatment. It must be taken into account, in a discussion of these figures, that the patients were treated for the most part at an out-patient clinic. Many of them, better treated at home, were obliged to travel long distances and await their turn for treatment, and then go home, often after a tedious ride in the cars and in inclement weather.

To sum up, seventy-seven per cent of the thirty-five cases received permanent symptomatic benefit, and eighty-four per cent of the forty-four cases received temporary symptomatic benefit.

As regards particular symptoms, two patients, Nos. 23 and 43, were afflicted with a profuse watery drain that was constant and required the use of a napkin. The electrical applications failed to relieve this permanently in either instance. In one, No. 23, it relieved temporarily. One patient, No. 24, has developed a watery leucorrhea lately, a year after ceasing electrical treatment. Nos. 23 and 33 suffered with the uterine cough spoken of by French writers; galvanism relieved this in a very marked degree in both. No. 23, who had been in the care of a prominent practitioner in town, had made use of nearly every known remedy without result; the cough was entirely cured by galvanism. Palpitation, a common symptom in fibroid cases, and not confined to those suffering with anemia from loss of blood, is favorably affected by galvanism.

Glancing over the results obtained, from an anatomical standpoint I confess to a feeling of disappointment. I have maintained a constant sharp lookout for miracles in the way of sudden disappearance of tumors and marked diminution in size, but as yet have failed to observe any. I do not deny that fibroids sometimes undergo rapid absorption without the aid of electricity. It has been my lot not to see any such. I have, however, seen masses of inflammatory exudate disappear under electrical treatment with a celerity that was almost miraculous.

Twenty-five of my cases, or seventy-one per cent, remained stationary in size. Assuming that fibroids if untreated will increase in size, we are justified in the conclusion that galvanism has an inhibitory effect on the growth of a majority of tumors. Until we know more of the conditions that favor increase or diminution in the size of these tumors, the laws of their pathological growth, we cannot say more. Temporary decrease in size was noted in nine cases, or 25.7 per cent. The decrease was proved to be temporary in six, and the remaining three were lost sight of in four, eight, and eight months respectively. The tumors in my series that increased in size were mostly large multiple growths, and dense rather than soft. They were seven in number, or twenty per cent. The increase in size was in no instance very great. Those that remained of the same size were interstitial and softer.

I have seen individual nodules reduced a third in size following puncture—e.g., No. 3. Large fibroids are seldom single.

Looking over the symptomatic results, we see a highly satisfactory showing. Of the cases in which pain was a prominent symptom sixty per cent were permanently cured and a considerable portion of the remaining forty per cent were temporarily relieved. Of those in which flowing was an important symptom, only thirty per cent were permanently cured, although a much larger percentage were temporarily benefited.

I am aware that this low percentage of cures in the hemorrhagic cases does not coincide with the results obtained by other observers. It seems to me that galvanism affects flowing in fibroids in two ways: first, by its tonic effect on the blood vessels and nerves of the pelvis; and second, by direct effect on the endometrium. As regards the first, galvanism is of great benefit in my experience. It generally regulates the flow in time, but in most tumors is not potent enough to check a decided hemorrhagic tendency. As to the second, we have several factors to consider—the size and shape of the electrodes, the duration of the treatments, whether the electrode shall be moved about, and, if so, how often, the intensity of the current, etc. But chief and foremost is the possibility of making a drying galvano-caustic application to the entire bleeding surface; for it is taken for granted that the source of hemorrhage in

fibroids is a condition of endometritis of the entire uterine cavity—a thick, spongy, bleeding membrane or an atonic, thin membrane filled with venous radicles. Now, with a patulous os externum and a straight canal of only three inches in length, it is, in my experience, an impossibility to go over every portion of the walls of the uterine cavity with any electrode or series of electrodes made. When the uterine canal makes a sharp turn and is from four to eight or nine inches in length, the absurdity of trying to reach all parts of the interior is at once apparent this even supposing the external os to be large; if it is small the difficulty is increased. It is a mechanical impossibility to guide the tip of a flexible electrode after it has gone round a corner in a tight canal; a rigid electrode cannot be passed. A considerable portion of fibroid tumors are so distorted that no intrauterine treatment can be given. To this fact in part may be attributed the comparatively small percentage of cures of flowing in the cases presented. The cases that were treated most carefully, with approved electrodes and high intensities, had a return of endometritis, just as we find is the case in those fibroids that have been curetted. Intra-uterine treatment with galvanism, where feasible, has the advantage over curetting that it does not subject the patient to the discomfort and risks of etherization, and is followed by no systemic reaction, which is often observed after curettement, especially in large tumors. Where the uterine interior is easily accessible curettement is more thorough; where it is not, electrical application is, in my opinion, the best means of local and general treatment. It far outranks topical applications of carbolic acid, iodine, etc., and is more effective and preferable to ergot and hydrastis, as it has a beneficial instead of a deleterious influence on the digestive organs and the system at large. Many of my cases were helped by galvanism after months of fruitless dosing with ergot and other drugs. Galvanism relieves for about the same time as curetting, allowing for its diminished thoroughness. I want to call special attention to Case No. 8. Here a submucous, pedunculated fibroid, one and a half inches in diameter and having a pedicle three eighths of an inch through, springing from the fundus uteri, was made to present at the external os as a direct result of two intra-uterine galvanic treatments of eighty and eightyfive milampères positive. The pedicle was then cut, the tumor delivered, and the patient recovered from her flowing. She

had previously had a trachelorrhaphy performed at one of our leading hospitals, and later on had been curetted by a well-known operator, without the presence of the polyp being detected.

Here is a good place to speak of the alleged danger of electrical treatment. Some abdominal surgeons have said that it causes abscesses and adhesions. It has done neither in my experience. It is contra-indicated in but two conditions, and those are pregnancy and the presence of acute inflammation. In a paper on the treatment of pelvic inflammation with electricity, published in the Boston Medical and Surgical Journal of June 16th, 1892, I cited a case of acute pelvic inflammation that I once treated experimentally with galvanism. She had salpingitis, confirmed by abdominal section. Her symptoms were aggravated by the electrical treatment. The proper application of electricity in the diseases of women is absolutely without danger, even in the presence of pus in the pelvis. I have treated a number of cases with such a condition for months, and later operated on them and removed the disease.

I recall one case in particular, and with your permission will outline it in brief. M. P., 39 years old, the mother of two children, proved on operation to have disorganized tubes and ovaries with abscesses on both sides. She was much benefited temporarily by both intra-uterine galvanism and bipolar vaginal faradism. She was under treatment a year, and had sixteen treatments with galvanism (P. S. N. S. $40^{\circ}-70^{\circ}$) and seven treatments with faradism (M. $70^{\circ}-100^{\circ}$), and then consented to operation.

Some of the patients having pus in their Fallopian tubes are very sensitive to galvanism, but they are not, in my experience, uniformly so, and I cannot agree with Apostoli that electricity is of value in diagnosing this condition. I shall refer to this matter again.

A word as to the claim that electricity causes adhesions. By reference to my records I find that I have opened the abdomen in eight patients whom I had previously treated for longer or shorter periods with galvanism. In six of the eight, well-defined adhesions were to be made out by bimanual examination before the patients were treated with electricity, and the adhesions were found when the abdomens were opened. I have found just as extensive and as strong adhesions in patients on whom no electricity had been used. Of the other two cases, one, No. 10 in my tables to-night, showed no vestige of an

adhesion. The other was most interesting for two reasons: there were no adhesions, and, although extremely sensitive to galvanism, there was no pus present. The facts are these: I. F., 29, married and the mother of three children, had a lacerated cervix and prolapsed tubes and ovaries. There was great tenderness on light pressure in the region of the right tube, this symptom having been present two years before, previous to the birth of her last child. I had seen her myself at that time and had noted the condition carefully. She was treated with vaginal galvanism for two months, receiving treatments as follows: N. 5, 20°-25°; P. 1, 25°; bipolar vaginal faradism F. 2, 40°. Having at that time just read Apostoli's article on the diagnostic value of sensitiveness to galvanism as an indication of the presence of pus in the tubes, I was on the lookout to test the principle. Here seemed to be a suitable case. Mrs. F. could not tolerate the galvanism, even in the small dose of 20°; she was not relieved of great pain in the lower abdomen by faradism, except very temporarily. I diagnosed pus tube and operated. On opening the abdomen I found small, prolapsed, cystic ovaries, and tubes that to every appearance were perfectly normal. There was no adhesion of any sort. She was entirely cured by curetting the uterus, free puncture of the ovarian cysts, and hystero-

A year ago I was present at an oöphorectomy performed by one of the leading operators in Boston. The case was a large fibroid that had been treated, a year before the operation, by puncture through the abdominal walls with steel needles. It so happened that I was present also when the punctures were made, one in January and the other in March, and know that the first was of one hundred and twenty milampères for twelve minutes, and the second of one hundred and twenty-five milampères for the same length of time. When the abdomen was opened there were no adhesions; and moreover, after careful inspection of the tumor, there were no vestiges of the punctures to be seen on its surface. I have been informed by several operators that they have had similar experiences. While we are on the subject of puncture I wish to say that I have punctured with two needles through the abdominal walls, the patient being under ether, several times. No harm resulted in the cases I did. Nevertheless the method does not appeal to me. I fear intraperitoneal hemorrhage or accidental puncture of the bowel.

(Continued on page 340.)

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Case No.	Name, age, social condition.	Pregnancies.	Description of tumor.	Depth of uterus at beginning, in cm.		Pain.
1	M. L., 35, m.	3 children, 1 abortion.	Multiple, nearly filling pelvis; hard; a nodule at each cornu; mobil- ity limited; lacerated cervix and perineum.	11.5	Profuse at regular periods; 17 nap- kins.	Constant pain in right groin for 6 years; dys- menorrhea.
2	E. M., 34, m.	1 child, 13 years. 0 abortion.	ity limited. (Ether examination.)		regular.	Constant pain across abdo- men; cramps first day or two of catamenia.
3	E. H., 32, s.		Multiple, rising out of pelvis; hard; nodules to right and behind; fundus in front and to left.	10.2	Regular; 5 days; 6 to 10 napkins.	Pain across abdomen for several months; cramps with catamenia.
4	D. F., 24, m.	0 children, 1 abortion at 3 mos. 3 years ago.	(Ether examination.) Multiple, nearly to um- bilicus; large masses behind; fundus in front and to right.	12.2	Profuse, every 3 weeks, since abortion 3 years ago; irregular.	Dysmenorrhea 3 years; constant pain in left low- er abdomen.
5	M. L. P., 46, s.		Small, interstitial; symmetrical; retroversion; uterus fixed.	9.2	Excessive flowing with periods for 5 years; irregular; 3 weeks; 50 to 75 napkins; lasting two weeks.	Cramps with flow
6	M. F., 48, m.	5 children, youngest8 years; 1 miscar- riage at 6 months.	Small, interstitial; fun- dus forward on blad- der; cervix in hollow of sacrum and ante- flexed; symmetrical.	10.5	Severe flowing at periods for 1 year; 2 weeks' flow; 12 napkins.	No pain
7	H. S., 43, m.	0 children, abortion at 6 weeks 9 mos. ago.	Multiple; size of a co- coanut; 2 lobes; mo- bility good. (Ether examination.)	8.5	Regular; 12 nap- kins.	
8	C. S., 40, m.	7 children, youngest6 years; 0 abortion.	Small, interstitial; also pedunculated submucous 14 inches by 14 inches; salpingitis right side. (Ether examination.)	9.	Bad flowing spells for 2 years, a sheet at a time.	Pain in right groin and low- er abdomen for 7 months.
9	A. C., 27, s.; col- ored.	•••••	Interstitial, cocoanut; rising out of pelvis; rather soft; symmet- rical. (Ether examination.)	9 5	Scanty; regular	Cramps across abdomen.
10	M. McK., 40, s.		Small, in anterior wall, size of marble; ante- flexion. (Ether examination.)	7.	Scanty; regular; 1 day.	Constant pain in back and ab- domen for 10 years; dysmen- orrhea.

General condition.	Number of months under observation.	Number of months from first to last treatment.	Number of treat- neuts.	Description of treatments.	Results.	end, in cm.
Of stout build; ner- vous; a great suf- ferer with pain.	30	23	50	Intra-uterine, 60°- 130°; P. 28, N. 19. Vaginal faradism, F. 3.	Much relieved of pain; not per-1; manently. At end of 1 year tumor a little smaller and mobility good; one nodule pedunculated. At end of 2½ years tumor larger, slightly. Flowing about the same.	2.8
Fair	5	5	8	Intra-uterine, N. 5. 32°-55°; P. 3, 55°-70°.	Flowing increased. Dysmenor- rhea relieved. Constant pain relieved for 3 weeks at a time.	7.6
Mental depression; an inmate of in- sane asylum.	8	8	21	Intra-uterine, N. 19, 50°-120° Vaginal punctures, N. 26° 6 minutes, N. 80° 5 minutes,	At end of 8 months mass reduced one-third. Mental condition improved.	
Pallor and anxious expression of countenance; a great sufferer; chronic constipa- tion; girth of ab- domen, 80 cm.	24	16	49		At end of 8 months uterus mea-1- sured 14 cm, and girth of ab- domen 81.5 cm. At end of 2 years exactly the same mea- surements. Flowing less. Pain and dysmenorrhea relieved. Catamenia regular.	.4.
In bed for 2 or 3 days with each flowing; unable to go up-stairs; iron and ergot for 8 months made her worse.	34	10	31		In 2 months had the best period in 5 years. In 3 months had gained 20 pounds in weight and not confined to bed with flow; able to go up- and down-stairs. 1 year, flow of 20 napkins; uterus freely movable; no cramps 3 years. flow of 20 napkins; regular to a day; has to keep still 2 days.	8 9
Of large frame; poorly nour- ished; unable to work; had taken ergot for 9 mos. without effect.	25	6	16	Intra-uterine, P. 13, 40°-125°; N. 3, 30°-60°.	After three treatments could do all her work except the washing. After 6 months, flow reduced one-half. Menopause in 1½ years.	
Sterility her only complaint.	4	3	16	Intra-uterine, N. 16, 50°-125°.	At end of 4 months mass not as large.	7.5
Blanched and weak; trachelor- rhaphy 6 months ago and curet- ting 1 month ago.	25	4	2 5	2, 80°-85° N. P. 2, 60°-120°; N. 3, 15°-100°.	treatments the pedunculated fibroid appeared at os exter- num and was removed with scissors. Salpingitis the im- portant factor. Refused ope- ration. Too weak to take elec- trical treatment. After I year	8.8
Unable to stoop; had noticed lump in abdomen for 4 years; girth of abdomen, 68 cm.	26	23	40	Intra-uterine, N. 39, 60°-90°. Abdominal puncture, 125° 10 minutes. F. 1, 40 F. 4 minutes.	flow regular, not profuse. General strength very good. At end of 11 months girth of ab-11 domen 69.5 cm.; at end of 16 months girth of abdomen 74.5 cm.; at end of 24 months girth of abdomen 74.3 cm. Patient much stouter, however. Tumor, I think, same size. Relieved of cramps. Able to stoop.	1.3
A great sufferer with dysmenor- rhea; frequency of micturition.	13	1	18	Intra-uterine, N. 6, 48°-70°. Vaginal, N. 12, 45°-80°.	At end of 1 month fibroid smaller and dysmenorrhea somewhat relieved. Dudley's operation for anteflexion. 1 year after cessation of treatment fibroid larger, dysmenorrhea worse. Myomectomy.	

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Case No.	Name, age, social condition.	Pregnaucies.	Description of tumor.	Depth of uterus at beginning, in cm.	Flowing.	Pain.
11	A. P., 41, m.	2 children, youngest 26 years.	Subserous; cocoanut; from left wall; dense; salpingitis. (Ether examination.)	9.	Regular; 3 to 6 days; 6 to 10 nap- kins.	Pain in left side and back for 6 months; severe dysmenorrhea.
12	A. R. N., 39, s.	,	Multiple, nearly filling pelvis; one mass size of small cocoanut on left, another, size of orange, on right; mo- bility good. (Ether examination.)		Bad hemorrhage 1½ years ago; flow increased for 3 years; irregular; 9 days; 50 napkins.	Slight dysmenor- rhea.
13	M. B., 42, m.	2 children, 13 and 11 years; no abortions.	Interstitial, fetal head: asymmetrical; larger on right; mobility good; lacerated cer- vix.	10.8	Periods every 3 weeks: more flow every other peri- od; not profuse.	Constant severe pain in back; dysmenorrhea.
14	M. H. L., 50, w.; colored.	1 child, 1 abortion.	Multiple, filling pelvis; dense; immovable; cervix so distorted that probe cannot be passed more than 1½ inches.		Profuse flowing at periods for 4 years; 8 days; flow every 2 weeks; 8 nap- kins a day.	worse on walk- ing; also pain
15	E. A., 30, m.	2 children, 1 abortion.	Interstitial, fetal head; dense; symmetrical; mobility good; lace- rated cervix; salpin- gitis.		Flow rather pro- fuse every other month; regular.	Pain in left side and back; bear- ing-down feel- ing; dyspareu- nia.
16	E. F., 33, m.	1 child, 7 years.	Interstitial, cocoanut; rather soft; more on left; mobility good.	10.2	Rather profuse and prolonged; regu- lar; 28 days.	Constant bear- ing-down pain in abdomen; 3 attacks of bad abdominal pain in last 10 months.
17	S. T., 41, m.	3 children, 1 abortion.	Large interstitial, ris- ing above umbilicus; umbilical hernia.	20.5	Profuse; regular; watery leucor- rhea; 10 napkins a day and 4 nap- kins a night.	
18	S. H., 38, m.	4 children. 13 to 5 years; 0 abortion.		13	Profuse flowing for I½ years; a nap-kin every hour when bad; of 9 days' duration; regular every 26 to 30 days until 1½ years ago.	for 14 years, increasing in severity.
19	K. C., 32,	0 children, 1 abortion at 9 weeks 2 years ago.	dus; mobility good.	7.8	Rather profuse; regular.	Constant pain in left side and back for years.

General condition.	Number of months under observation.	Number of months from first to last treatment.	Number of treat- ments.	Description of treatments.	Results.	Depth of uterus at end, in cm.
Fat and hysterical; unable to do much work; hy- persensitive.	14	9	39	Intra-uterine, N. 17, 35°-65°. Vaginal. N. 7, P. 2, 35°-50°. Vaginal faradism, F. 13, F. 50°-100°.	Unable to determine exact size of tumor at end of treatment without anesthesia; think it was the same. Sensitiveness relieved temporarily. Dysmenorrhea relieved. Able to do more work.	
Anemic; of stout build; confined to bed with each flowing.	24	11	20	Intra-uterine, P. 2, N. 7, 40°-70°. Vaginal puncture under ether by Dr. Baker, 125°, N. 15. Vaginal galvan- ism, N. 8, 35°-		
Fair; constipated	18	17	61	Faradism 3, F. 70, Intra-uterine, P. 36, 60°-90°; N. 19, 40°-75.° Bipolar vaginal faradism, F. 6,	Flow a little increased in amount. Pain in back uni- formly relieved for 2 days af-	
Weakness from excessive flowing; painful micturition and defecation.	18	18	29	100.° Intra-uterine, P. 19, N. 3, 50°–100°. Vaginal, P. 4, 50°– 60°. Bipolar vaginal faradism, F. 3, 75°–100°.	After 8 months tumor smaller, after 13 years tumor same size Flowing, 8 napkins a day for 3 or 4 days instead of 8 days every 3 weeks. Constant pain	
Of stout build; neurotic.	8	7	13	Intra-uterine, N. 7, P. 2, 40°-70. Vaginal, P. 2, N. 1, 40°. Faradism, F. 1,	At end of 8 months tumor reduced to size of large orange. Flow as before. Pain relieved. Improved strength.	
Much pulled down by attacks of abdominal pain; frequency of mic- turition.		3	13	60°. Intra-uterine, N. 11, 40°-70°. Vaginal, P. 1, 35°. Faradism, M. 1, 50°.	At end of I year tumor larger. Flow profuse. One attack of abdominal pain. Very miserable. Hysterectomy (Baer's	
Annoyed by size of tumor; watery drain and gene- ral weakness; girth of abdomen 103 cm.		4	26	Intra-uterine, P. 17, 100°–175°; N. 9, 75°–200°.	domen 103 cm.; at end of 14 years girth of abdomen 101 em. Increase of fat in parie- tes; had worn an umbilical truss for 6 months. More room in abdomen. Increased strength. Watery drain and	
Large, stout; very nervous; easily startled; alco- holic (?).	1	2	8	Intra-uterine, N. 4. P. 2, 60°-100°. Vaginal, P. 3, 15°-70°; F. 3, 70°.	abortion 6 months after. Periods regular (26 to 30 days). 4 to 6 napkins, since. Able to	
Fair	18	15	41	Intra-uterine, P. 23, 35°-150; N. 11, 50°-100°. Vaginal, N. 2, 50°-80°. Puncture, N. 1. 50°; F. 4.	larger. Flow increased in amount and periods prolonged Pain relieved for a few days at	r i

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Case No.	Name, age, social condition.	Pregnancies.	Description of tumor.	Depth of uterus at beginning, in cm.	Flowing.	Pain.
20	A. R. H., 38, s.	,	Subserous: goose egg, from right side of fun- dus. (Ether examination.)	8.2	Rather profuse; regular.	Dysmenorrhea; moderate.
21	J. S. R., 43, m.	2 children, 19 and 17 years; 0 abortion.	Multiple and intersti- tial, filling cavity of pelvis; large lobe be- hind.	8.6	Regular; normal	Frightful cramps with periods, causing her to give up work for 6 years.
22	F. M. S., 36, s.	•••••	Subserous; hen's egg, in left lateral wall of uterus; retroversion; mobility good. (Ether examination.)	9.5	Profuse for 2 years; catamenia every 23 days; 50 nap- kins.	Constant pain in back; unable to turn over in bed.
23	M. H. H., 40, m.	0 children, 0 abortion.	Interstitial cocoanut; mobility limited. (Ether examination.)	9.3	Menorrhagia for 5 years; flow every 3 weeks; 30 to 40 napkins; shreds and clots; a clear watery discharge	Dysmenorrhea for first 3 days,
24	M. A. S., 36, s.	•• ••••	Multiple, large, to edge of ribs; 2 lobes. large, and smaller above and between. (Ether examination.)	19.	between periods. Menorrhagia for 2 years; every 3 weeks; 21 nap- kins.	Dysmenorrhea
25	N. O'H., 30, m.	1 child, 10 years; 0 abortion.	Interstitial, orange; tu- mor more on left; mobility good.	8.4	Menorrhagia for 2 years; every 30 to 32 days; 5 days; 20 napkins.	
26	M. C., 38, m.	4 children, youngest 12; 0 abor- tion.	Interstitial, small; sym- metrical, except slightly larger on left. (Ether examination.)	8.9	Profuse flowing every 4 weeks for 9 months; 40 nap- kins; 4 to 5 days	
27	E. P. C., 35, m.	3 cbildren, youngest 9; 0 abor- tion.	Interstitial, small; mostly in posterior wall; retroversion; la- cerated cervix; mass m cul-de-sac (tubo- ovaritis). (Ether examination.)	9.2	Profuse flowing off and on for 7 years; nearly constant; free- dom for 3 mos. once during that time.	
28	H. B., 43, m.	3 children, youngest 15; 1 abor- tion at 3 months.	Interstitial, small; in posterior wall from external os to one-half inch of fundus; lacerated cervix and perineum; retroversion. (Ether examination.)	9.	Profuse flowing for 3 months; me- trorrhagia; cata- menia always profuse.	

General condition.	Number of months under observation.	Number of months from first to last treatment.	Number of treatments.	Description of treatments.	Results.	Depth of uterns at end, in cm.
Neurotic; stout; nervous prostra- tion 6 months ago; consulted physician be- cause of frequen- cy of inicturition.		24	45	28, P. 9, 35°-70°. Vaginal faradism, F. 8, 50°-100°.	Treatment followed curetting and was in 3 periods of 3 months each. Tumor changed location, moving down to cervix: at end of 2 years same size (ether examination). Nervous symptoms and frequency of micturition relieved. Bad flowing, had to curette.	8.2
A hard-working woman of spare build; chief com- plaint, cramps; soreness across abdomen.		25		60°-80°, I. 6, 60°-80°, Intra-uterine, N. 8, 50°-80°; P. 5, 40°-50°.	Great gain in flesh and strength	
A great sufferer with pain; diffi- culty in walking because of pain: general health good.		24		17, P. 5, 50°-80°. Vaginal, N. 18, P. 1, 50°-100°. Faradic, F. 2, 75°- 100°.	At end of 6 months backache almost entirely relieved. Catamenia of 25 napkins, and painless. At end of 3 years tumor same size: no pain. Has had no treatment for 1½ years Flow regular.	9.5
Very anemic: dys- pnea; cough; general weak- ness; curetting & times, a year ago.		9	28	Intra-uterine, P. 28, 40°-130°. Vaginal, P. 4, 50°. Faradic, F. 1.	After 2 months, had not had so little watery discharge for 5 years. Flow of 15 napkins. Cough relieved; strength improved. After 1 year, flowing severe, requiring packing, tumor same size. Ouphorectomy and cure	
Of large frame nervous temper ament; genera health good girth of abdo- men 94.5 cm.		2		Intra-uterine, P. 11, 100°-160; N. 1, 100°. Prolonged treatments with large tips.	After 3 months girth of abdo- men 1025 cm.; after 14 years girth of abdomen 106 cm. Tumor a little larger. Flow regular every 4 weeks, 18 napkins. A watery di-charge	
Constant pain across abdomen unable to sleep because of pain.	6	3	12	Intra-uterine, P. 1,50°; N. 7,50°-70°. Vaginal, 1,75°. Faradic, F. 3, M. 50°-60°.	At end of 6 months tumor same size. Pain entirely relieved.	8 4
Weakened by re peated flowings nervous, and sen sitive about ute rus; treatmen followed a curet ting.	; -	1	6	Intra-uterine, P. 6, 55°-75°.	Flow of 14 napkins 10 days after cessation of treatment; another of 20 napkins 1 month after treatment. At end of 1½ years flowing irregular but profuse.	
Stout; flesh flabby nervous prostra tion 15 years ago and never wel since; treatmen followed a cu retting.	i	14	20	Vaginal, P. 3, 60°-85°.	months, flow of 20 napkins each month for 3 months, then amenorrhea for 4 months. At end of 1½ years, flow regular (7 days, 10 napkins). Curetting and trachelorrhaphy. Endometritis	
Small frame; poor ly nourished anemic; unde observation for years.	r	2	6	Intra-uterine, P 6.50°-80°.	After 2 treatments, flow the same. Curetted, and relief for 3 months, then bad flowing Ether, and finger in cavity of uterus, curetting, and further intra-uterine galvanism. No flow for 3 months, then as be fore.	0

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Case No.	Name, age, social condition.	Pregnancies,	Description of tumor.	Depth of uterus at beginning, in cm.	Flowing.	Pain.
29	E. B., 28, m.	0 children, 0 abortion.	Interstitial, small; in posterior wall just above os internum; anteflexion; retropo- sition. (Ether examination.)	8.9	Menorrhagia for 1 year: catamenia regular; 16 nap- kins; leucorrhea.	
30	M. W., 50, m.	5 children, youngest 20.	Interstitial. cocoanut; symmetrical: mobili- ty good; lacerated cervix and perineum; cystocele.		Bad "flooding" 4 months ago: ca- tamenia regular until then and since: menor- rhagia 4 months	Continuous pain in small of back.
31	M. P. P., 30, m.	12 and 11 years; 13 abortions	Interstitial, small: sym- metrical; solid tumor right ovary size of duck's eggr: syplulis. (Ether examination.)		Severe flowing every 2 weeks for 3 months; 25 nap- kins; last abor- tion 6 months ago.	Headaches
32	M. D., 37.		Subserous; English wal- nut. from left wall of fundus; auteflexion; symmetrical enlarge- ment; mobility good.	ì	Profuse and irregu- lar catamenia for 1½ years,	
33	C. B., 40, m.	2 children	(Ether examination.) Subserous; goose eggs, one on each side of fundus; retroversion; prolapsed and adhe- rent adnexa.	7.8	Catamenia irregu- lar; 5 days; 10 napkins.	Pain in back and across abdo- men.
34	K. B., 47,		(Ether examination.) Interstitial, cocoaunt; dense; symmetrical; retroflexed.	7.8	Regular every 23 days.	Dysmenorrhea always pre- sent, increas- ing in severity; now in bed 2 days with cata- menia.
35	S. G., 33, m.	0 children, 0 abortion.	Interstitial, cocoanut; symmetrical; retro- posited.	7.5	Every 14 to 21 days; 5 to 6 days' flow; 12 napkins.	Slight dysmenor- rhea.
36	M. B., 35, m.	0 children, 1 abortion at 3½ mos.	Interstitial, nearly fill- ing pelvis; dense; sub- peritoneal nodules; old cicatrices in va- gina from pelvic ab- scesses.	9.	Irregular	Dysmenorrhea
37	A. A., 47, m.	3 children, youngest 14; 2 abor- tions.	Multiple, nearly filling pelvis; 2 lobes.	11.	Metrorrhagia; pro- fuse for last 3 mos.; previously regular; 2 or 3 napkins a day	Paiu in right abdomen for 6 years.
38	E. L., 43, m., col- ored.	1 child, 18 years.	Interstitial, cocoanut; mostly in right wall of uterus; a few small subserous nodules on the left.	9+	for 2 weeks. Regular every 4 weeks; 1 week; 10 napkins.	Pain in back and loins for 3 years; pain worse for 4 weeks; unable to sleep, it is so severe.

General condition.	Number of months nuder observation	Number of months from first to last treatment.	Number of treat- ments.	Description of treatments.	Results.	Depth of ut-rus at end, in cm.
Never in rugged health; 3 attacks of "inflamma- tion of womb"; tumor removed from cervix 3 years ago; treat- ment followed curetting.		6	34	Intra-uterine, P. 7. N. 9. 25°-45°. Antiseptic cata-phoresis with creosote, 8 N., 25°-40°. Vaginal, N. 6; F. 4.	Flow reduced in amount; ir- regular. Leucorrhea not re- lieved. Pain relieved. Gene- ral strength improved.	
Stout; nervous; hot flashes for 6 months; "sag- ging of womb."	16	11	27	Intra-uterine, P. 15, 35°-100; N. 3, 60°-100. Vaginal, N. 6, 25°-60°. Faradic, F. 3, 70°.	Flow decreased in amount; irregular after 5 months; occasional flowing spells since, every 4 to 6 months. Hot flashes absent 5 months after beginning treatment; returned in 5 months, though less troublesome. Less pain in back. Tumor same.	
Of small frame; anemic; hyper- sensitive about uterus; unable to work; treatment followed curet- ting.	24	4	30	6, 50°-60°. Vaginal, right, P. 7, 50°-60°; N. 17, 30°-50°.	After 1 month flow of 16 nap- kins. Ovarian tumor one-half former size. After 3 months ovary twice normal size, and has remained same size. Be- came pregnant. Able to do hard work. Uterus same as before. Local sensitiveness re- lieved, and headaches by po	7.
Anemic from loss of blood; dyspep- tic: treatment followed curet- ting.	18	2	9	Intra-uterine, P. 6. 55°-90°. Vaginal, P. 3, 15°-50°.	tassium iodide. After 4 months had flowing of 24 napkins, then regular, 12 napkins or less. At end of 1½ years no further flowing. Oc- casionally skips a month.	
Dysuria; cough; syphilis.	7	6	18	Intra-uterine, N. 8, 40°-80°. Vaginal, N. 8, 20°-60°. Faradism, M. 2, 35°.	At end of 7 months tumors same size. Relieved of cough, not of dysuria. Myomectomy in 7 months. Relief.	7.8
Well except at time of catame- nia	12	10	21	Intra-uterine, N. 6, 50°-70°. Vaginal, P. 4, 30°-60°; N. 6, 35°-100°. F. 5, M. 50°-100°.	At the end of 1 year no relief of dysmenorrhea. Skips a month every few months. Tumor same size.	
Unable to work; hurts her to sit down.	9	8		-50°-60.	Flow increased in amount. Tu- mor same s.ze.	7.5
Chief complaints are lumps in ab- domen and ab- dominal tender- ness; under ob- servation at Free Hospital for 9	4	2	9	Vaginal, P. 3, 60°. Faradic, F. 35 Faradism, vagino- abdominal, F. 8, 70°-100°. Vaginal galvan- ism, P. 1, 20°.	Tenderness of abdomen invariably relieved by faradism. Galvanism caused increased tenderness and pain.	
years. Alcoholism	2	2	6	Intra-uterine, P. 6,50°-70°.	Flow diminished. Had a hemor- rhage from the lungs, and very sick at home. Passed from under observation.	
Loss of flesh; hot flashes that make her weak.	2	2	8	Iutra-uterine, N. 5. P. 1, 40°-70°. Vaginal. N. 1, 50°; P. 1, 25°.	At end of 2 months pain much relieved Hot flashes less troublesome.	

Case No.	Name, age, social condition.	Pregnancies.	Description of tumor.	Depth of uterns at beginning, in cm.	Flowing,	Pain.
39	M. B., 27, s.		Multiple, filling pelvis and part of abdomen; a portion submucous and presenting at os externum, which was dilated to size of a silver dollar.	13	Severe flowing 8 months ago and for last 3 weeks; previous to 8 months, regular; 4 to 5 days; 10 napkins.	Pain in back for 1 year.
40	K. C., 40, m.	0 children, 0 abortion.	Interstitial, cocoanut; most of tumor in au- terior wall of fundus; mobility good.	10	Irregular flowings for last 7 years; very bad of late; 24 napkins every 2 weeks.	Pain in right hip.
41	M. C., 39, s.		Interstitial, cocoanut; uterus distorted; os externum on side; dense; hemorrhoids.	• • • •	Catamenia profuse for 2 years; 16 to 20 napkins; clots.	7 years; dys- menorrhea, se- vere; has to give up work for 4 days each
42	A. V , 45, m.	0 children, 0 abortion.	Multiple, large, half filling abdomen; 2 lobes.	11.6	Regular; 4 days; 8 napkins.	time. Pain in back for 2 years.
43	T. S., 37, m.	13 children, oldest 17, youngest 2; 0 abor- tion.	Interstitial, small; sym- metrical; dense; tubo- ovaritis right side; mobility good; lace- rated cervix and peri- neum.		Menorrhagia, pro- fuse for 10 mos.; worse every sec- ond month.	2 years, so bad
44	R. R. G., 40, m.	3 children, youngest 8; 3 abor- tions.	Interstitial; small; sym- metrical; retroverted; hard; lacerated cer- vix and perineum.	10.2	Regular every 3 weeks; 6 days; 12 to 14 napkius.	Pain across ab domen.

Puncture through the vagina, using as the other pole the clay plate on the abdomen, I have done a great many times, without ether as a rule, and exceptionally with it. I have never had a bad result. The chief objection to the method is its painfulness if used without anesthesia. It is applicable in only a limited number of cases, because of the danger of wounding the bladder, ureters, or rectum.

Intra-uterine treatment is to be preferred to puncture. This is often painful if high intensities are used, especially in the case of small tumors. We have not here in Boston such phlegmatic patients as are seen in the clinics abroad. It is a mistake to begin electrical treatment with intra-uterine applications and with high intensities. Many of our nervous single women, especially those in the higher walks of life, have to be handled

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General condition.	Number of months under observation.	Number of months from first to last treatment,	Number of treat- ments	Description of treatments.	Results.	Depth of uterus at end, in cm.
Thin; anemic; a chronic tea drinker; very nervous; hardly strong enough to report at clinic; timid.		2	9	Punctures in sub- mucous mass in os externum, P. 125°, N. 125°- 150°. Electrode in os, P. 3. 35°-40°: N. 2. 50°-100°: F. 100°.	gauze packing. Not strong	
Of spare build; poorly nourished.	11/3	11	6		After first treatment back felt better than it had felt for 13 months. One flow of 12 napkins and 1 flow of 5 napkins. By breaking of rheostat patient received a shock. Never seen again.	
Occasional vomit- ing.	11/2	11/3	8	Vaginal, P. 2, 50°- 60°; N. 6, 40°-t0°.	Pain and vomiting increased.	
Loss of flesh	1	1	6	Intra-uterine, P. 1,70°; N. 5, 50°- 100°.	Treatment caused some flowing and pain Patient did not continue under observation. Wrote 1 year later that she had had electricity at home and was better.	
Stout; flesh flabby; anxious expres- sion to face; very miserable with pain; hyperes- thesia of abdo- men.		11/2	10	Intra-uterine, P. 10, 35°-100°; F. 100° with same electrodes as for galvanism and following it.	After 2 weeks and 6 treatments pain gone. Able to walk and sit. At end of 1½ months pain relieved. Patient left town	
Of large frame; flesh flabby; ane- mic; previous treatment with tonics and pes- sary for 1½ years.		3	8	Intra-uterine, P. 2, 65°-65°; N. 4, 35°-65°, Positive with carbon tips and following negative. F. 20.		9.9

very carefully. Even when a patient has become accustomed to intra-uterine treatment she may not be able to tolerate more than sixty or seventy milampères; it is common to see patients who cannot. Treatments should, as a rule, be begun with vaginal galvanism or faradism. The larger the tumor, other things being equal, the greater the tolerance to intra-uterine and puncture treatment and to high intensities. Here let me testify to the good results obtained from the use of faradism from the fine coil for the dissipation of the pain caused by galvanic treatment. Bipolar vaginal or intra-uterine has, in my hands, yielded most gratifying results. As a rule, it may be said that the pain of fibroids is best relieved temporarily by faradism and permanently by galvanism.

Coming now to my third classification of symptomatic results,

we find that twenty-one cases were improved permanently in general health and rendered better able to work. Leaving out of consideration those that were not benefited because the flowing or pain with which they suffered were not relieved, we have twenty-one out of twenty-five cases, or eighty-four per cent, permanently cured. It is often surprising to see the improvement in general health following one or two treatments with electricity. A patient previously a great sufferer with pain, emaciated, of anxious countenance, unable to go up- or downstairs, to sweep, dust, or in fact to do any of her own work, after taking a few treatments becomes cheerful, loses that drawn, worried look, can endure more, and gradually gains flesh. Nothing in my experience has been capable of producing such results in fibroids as galvanism, and galvanism applied locally. I have tried general electrization in these cases, but without any such marked improvement as characterizes local galvanization. Surely it is more rational to apply the remedy as nearly as possible at the seat of the disease.

I think that every patient suffering with a fibroid tumor of the uterus should be under competent medical supervision. She should be seen from time to time, and, if the symptoms warrant, should be treated. In this way only have we any surety that the patient will not be subjected to needless dangers and distressing symptoms later on. Fibroids, I believe, are not the harmless tumors they have been thought to be; although they seldom kill quickly, they wear out slowly, and many a woman leads a life of misery and suffering because the profession has believed and advised that nothing but hysterectomy could relieve. It is my experience that women with fibroids do not arrive at the menopause until from seven to ten years after the age at which most women reach the climacteric. Not only that, but they are more subject to pain, flowing, and exaggerated and distressing nervous symptoms, to say nothing of the dangers of malignant degeneration and kidney disease from pressure, during the period of life from 40 to 60 years of age, than is commonly supposed by the profession at large. Besides this, a great many fibroids are not absorbed after the climacteric; certain of them undergo degeneration, and some become malignant. As we learn more and more about these tumors, and better appreciate the symptoms to which they give rise, their laws of growth, the dangers to the economy from long-continued

pressure, and as the technique of hysterectomy is improved and the mortality lowered, it is my opinion that the operation for total removal will be practised more and more often, and earlier and earlier in the life history of fibroids. When patients are in such poor condition from long neglect that such a radical measure is contra-indicated, electricity offers us a means to prepare them for the great strain of an operation. I believe that the results of hysterectomy will be better when the patients are more carefully prepared. There will always be a large number of fibroids where operation is inexpedient or refused and where the suffering is considerable. As physicians our duty is to relieve this suffering, and because too much has been claimed for electricity is no reason why we should neglect it altogether. It is, in my opinion, the best therapeutic measure at our command with which to treat fibroid tumors of the uterus, because most tumors treated with it do not increase in size, because it is absolutely safe, because it will relieve pain in a very large number and hemorrhage in some, and because it is sure to improve the general health and strength.

Conclusions.—1. Hysterectomy is contra-indicated in a majority of cases of fibroids because of the high rate of mortality and because it unsexes the patient—the latter an important consideration in younger women.

- 2. Electricity is the best therapeutic means at our disposal to combat pain, hemorrhage, and impaired health and strength.
 - 3. Intra-uterine galvanism is most advisable.
- 4. We must not look for a permanent reduction in the size of the tumor.
- 5. Galvanism—vaginal, intra-uterine, or by puncture—does not cause abscesses or adhesions.
- 6. Galvanism is of no use as a means of diagnosing the presence of pus.
- 7. Treatment by electricity after the Apostoli method is absolutely safe.
- 8. Every case of fibroid tumor of the uterus should be under competent medical observation, because of the danger of malignant degeneration, kidney disease from pressure on the ureters, complications during pregnancy, and the liability of the occurrence of pain and hemorrhage, and functional nervous disorders, especially during a delayed and protracted menopause.

140 MARLBOROUGH STREET.

ACUTE NON-PUERPERAL METRITIS, WITH REPORT OF A CASE.

BY
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On September 27th, 1888, I was called to see a patient with the following history: Mrs. C., aged 42, married, had two children, the youngest 17 years of age; no miscarriages; menstruation had always been regular, normal in amount, and painless. She had always enjoyed good health, except that she had been treated occasionally for some form of uterine trouble. On the evening of the 26th she had retired in her usual health.

The next morning, when I saw her, she had had a chill; her temperature was 100°, her pulse 110; there was pain in the pelvis, also in the sacral and hypogastric regions, but the most marked symptom was rectal tenesmus, with frequent stools consisting of mucus tinged with blood. The pelvic pain led me to make a vaginal examination. I found the vagina hot and dry, the uterus somewhat enlarged and exquisitely tender. I gave her a hypodermic injection of morphia, which was followed by rectal suppositories of opium and belladonna when necessary for the relief of pain. She had hot vaginal douches twice a day; she was kept quiet in bed and fed on liquid diet. In about a week the acute symptoms had subsided, but the uterus remained large and tender, and any movement of the body caused severe pain. For seven months this patient was confined to her room, most of the time to her bed, as any attempt at walking caused so much discomfort that she was glad to abandon any effort in that direction. The treatment of the case consisted in rest, hot vaginal douches, vaginal suppositories of iodoform and belladonna, galvanism, and, as soon as she could bear the introduction of a speculum, the cervix was brushed twice a week with Churchill's tincture of iodine, and tampons saturated with Wyle's solution of boroglyceride were introduced into the vagina. During the last two months of the treatment there was but very little if any improvement in the patient's condition, and the only remedy that seemed to offer any hope of permanent benefit was the choice of one of three operations recommended by different gynecologists for the cure of this condition. Martin recommends amputation of the posterior lip of the cervix; Noeggerath a favors amputation of the entire cervix, allowing the wound to heal by granulation; while Skene has had good results from taking a wedge-shaped piece out of either side of the cervix and closing the wounds by means of sutures. I chose the latter method and performed the operation on May 14th. The sutures were removed on the tenth day, when union was found to be perfect and the uterus already very much less tender. From this time the patient's recovery was rapid and complete. The tenderness of the uterus absolutely disappeared, and the patient has since enjoyed excellent health. By acute parenchymatous metritis we mean an inflammation in the muscular wall of the uterus.4 It is a matter of disputation whether acute metritis ever exists as an independent affection. Klob says: "Inflammation of the substance of the non-gravid uterus seems to be one of the rarest affections to which the organ is liable." Rokitansky remarks that in acute inflammation of this organ generally the lining membrane of the uterus is affected primarily, and that this is scarcely ever the case with uterine tissue. Schröder, who contends for its occurrence, states that he has seen four well-marked cases in his practice. I believe the case just reported was one of acute metritis, and not a case of acute endometritis, for the following reasons: first, the severity of the attack; second, the entire absence of any vaginal discharge; and, third, the subsequent course of the disease. In regard to the severity of the attack Thomas 'says: "Acute endometritis usually demonstrates its presence in the non-puerperal uterus without any very violent symptoms, and may, without treatment, even go on to recovery, generally lasting from a month to six weeks, and usually ending in chronic endometritis, should recovery not take place." Skene says "the great majority of cases of acute endometritis recover, and the worst that may happen is that the disease may linger and assume the chronic form." In the second place, the characteristic symptom of acute endometritis is the discharge, which is at first clear and watery, but after a few days becomes creamy and purulent, and which, owing to its irritating character, soon causes vaginitis and pruritus vulvæ. 10 In the case

reported this characteristic discharge was entirely absent during the whole course of the patient's illness. In regard to the third point, acute endometritis ends, as we have seen, in chronic endometritis or recovery, and not in areolar hyperplasia of the uterus.

6229 PENN AVENUE.

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 - 8. Тномая, р. 273.
 - 9. Skene, p. 178.
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CHRONIC SALPINGITIS.
WITH REPORT OF FIVE CASES, 1

BY

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At the present time we recognize and treat promptly cases of salpingitis or ovaritis with large collections of pus in or around the tubes and ovaries. We recognize the fact that the most prompt and radical treatment is the most conservative treatment. There is, however, a certain class of cases of chronic or less active disease of these organs in which the gravity of the lesion is usually overlooked because of the lack of pronounced physical signs, although the subjective symptoms are sufficiently well marked to render the patient a helpless invalid, whose life is often a burden to herself and sometimes to others.

The principal symptom is pain—pain in the inguinal region that never ceases, but which is usually aggravated at the menstrual period and aggravated by exercise. Pain that is just severe enough to cause sleepless nights; just severe enough to wear out the check centres of the nervous system, leading to reflex neuralgias and reflex disturbances of the digestive func-

¹ Read before the Washington Obstetrical and Gynecological Society.

tion, with the inevitable production of anemia and its host of symptoms—anemia of the brain, with its nervous headaches and mental depression; anemia of the cord, with its muscular relaxation and shifting neuralgias; and anemia of the alimentary tract, with its increase of indigestion and constipation. Such women usually go from one doctor to another, getting, perhaps, a different diagnosis but nearly the same treatment from each, until at last, becoming disgusted with gynecologists, tampons, electricity, massage, uterine drainage, etc., they resign themselves to a life of pain and physical worthlessness. Unfortunately for them, there is no large mass in the pelvis, no fluctuating tumor, or their sufferings would be promptly relieved by an operation.

My remarks are confined to cases where the symptoms are pronounced, but where physical examination shows little evidence, or at least what seems to be generally regarded as little evidence, of pelvic disease. And I refer only to cases that do not yield to such treatment as uterine drainage, the curing of coexisting endometritis, the use of electricity and massage for breaking or causing the absorption of adhesions; to the cases that have been treated without avail, treated often until the treatment has degenerated into a blind, unscientific, useless application of every known remedy; cases that are supposed, from lack of physical signs, to be simple catarrhal salpingitis, but which are in reality chronic pus cases with small collections of pus held in the tubes by the more or less complete obliteration of their lumen in places, the tube being thus divided by strictures into small segments containing pus. Such tubes may or may not be adherent. These are the cases that have become an opprobrium, and yet in my experience they are the very cases in which we may get the most brilliant results by removal of the diseased organs, and they are the safest cases for operation. Compared with acute pus cases the danger is almost nil. I know no statistics for such selected cases, and I have personal knowledge of but eleven cases, four operated upon by myself and seven by I. S. Stone, Gill Wylie, and Howard Kelly. All of these cases recovered without a dangerous symptom, and the operation is so quickly done, the reaction so slight, that I see no chance for a fatal result except by infection of the peritoneum, a thing that ought to be avoided with almost absolute certainty. I think the mortality should about equal that of circumcision.

The following cases will, I think, explain and sustain my position.

Case I.—A poor but refined and educated white woman, 26 years old, married, came under my treatment at Columbia Hospital September 1st, 1888, with the following history: Has one child 7 years old, and has not been well since its birth, suffering from pain in the back and more severe pain in the left inguinal region, which is worse at the menstrual epoch and renders her incapable of doing even light housework. Has dyspepsia, is constipated, subject to frequent headaches and attacks of neuralgia in various places. Has been treated by a number of physicians without permanent benefit. Examination showed the uterus retroverted and fixed, with considerable thickening of the tissues about the left broad ligament.

Under treatment with douches, tampons, electricity, and massage she improved very much. In a month all her symptoms had disappeared except the inguinal pain, and that was much less severe. But even after four months of treatment this pain had not disappeared, nor did it seem to improve after the first month. She was discharged in January, 1889, the uterus being then pretty freely movable. During the following summer her symptoms returned in full force, and I treated her at my office for several months. She again improved rapidly up to a certain point, and promptly relapsed when the treatment was stopped.

In 1890 she moved to North Carolina and her health became worse, although she remained constantly under the treatment of a physician who, she says, finally performed on her Alexander's operation. This operation was followed by fever and a severe illness of six weeks' duration.

In the summer of 1891 she returned to Washington and eame to me again for treatment. Her condition was worse than ever. She was hardly able to walk the block from the ears to my office, emaciated, haggard, and looked to be 50 years old. The pain had never left her and was now worse than ever. There was, however, no physical evidence of pelvic disease, except a moderate fixation of the retroverted uterus and some thickening of the tissues to the left of the fundus. I again improved her condition by palliative treatment and advised her to have the tubes removed. Her experience after having the round ligaments shortened did not make her take kindly to the suggestion of another operation, but she suffered so much that she finally

consented. As she was unable to have the operation done at home, I sent her to Dr. Stone at Columbia Hospital, gave him her history, and urged him to operate. He thought there was hardly sufficient evidence of pelvic disease to warrant a laparatomy, but agreed to make an exploratory incision if he could get the consent of the consulting staff. Their consent was reluctantly given, and the operation was done on the strength of my presentation of the history of the case. I was present at the operation, which was done by Dr. Stone in October, 1891. Both tubes and ovaries were removed without difficulty, although they were firmly adherent and the adhesions were old and tough. The uterus was also freed. The tubes were occluded near the uterus, contained a little pus, and the ovaries were like masses of fibrous tissue. There was no other evidence of disease, and it was quite evident that no examination previous to opening the abdomen could have disclosed any sign of pelvic disease except the diminished mobility of the uterus and some thickening of the broad ligaments. The result of the operation was brilliant. The patient had no fever or bad symptom of any kind, sat up on the tenth day, and from that time has been free from pain. She has become robust and plump, and does hard work without any difficulty. In a word, she has been transformed from a decrepit invalid, apparently 50 years old, into a hearty young woman of 30. She appreciates fully what has been done for her, and is one of the most grateful patients I have ever seen.

Case II.—A colored woman, 32 years old, married eleven years, came to me in January, 1890. with the following history: Had a miscarriage soon after marriage, at about the third month of gestation. Did not have much trouble at the time, but from that date her health began to fail. Suffers from constant backache and pain in the inguinal region on both sides. Menstrual flow regular, but profuse and painful. Is always confined to bed at the periods, and for some months has been unable to do any work without severe pain. Has dyspepsia, is nervous and constipated. Has been under treatment at various dispensaries here and in Baltimore for three or four years. She was greatly emaciated and showed evidences of suffering in the drawn expression of her face. Examination showed nothing but a lateral fixation of the uterus, which was drawn to the right, and slight thickening of the tissues to the right of the fundus. She was disgusted with "treatment," and was willing to have any operation done that afforded a hope of permanent cure.

Accordingly, on January 16th, 1890, assisted by Drs. Middleton, Carter, and Ruffin, I operated on her at her house, removing both tubes and ovaries. I found nearly the same condition as in the previous case. Both tubes were congested and thickened slightly, and contained small collections of pus, held in situ by obliteration of the calibres of the tube on either side. It was impossible to pass a probe through either tube, or even to tell where the lumen had been, except where it was distended with pus. The right tube was adherent, the left one being free. The ovaries were tough and contained small cysts. One of these cysts contained pus. This patient recovered promptly from the operation, and six months later had gained twenty pounds, was entirely free from pain, and was making her living by taking in washing.

Case III.—I was consulted in March, 1890, by a single white woman, aged 26, with a history of pelvic pain and recurrent attacks of pelvic inflammation, which had become more frequent of late. In the intervals she had constant backache and pain in the inguinal regions. Constipated, anemic, nervous, but rather plump. Examination showed nothing but slight fixation of the uterus, thickening of the tissues around the fundus, and a small mass to the right of the fundus that proved to be an enlarged ovary the size of a small walnut.

I took this patient to my house, and May 27th, assisted by Drs. Shute, Middleton, Ruffin, and Phillips, removed the appendages. A very small amount of thickening or enlargement existed. The tubes were not adherent, and slightly, if at all, enlarged. But they contained small collections of pus, as in the former cases, circumscribed by occlusions of the lumen of the tube. The ovaries contained small cysts. The right ovary was enlarged to the size of a walnut.

The result in this case has been all that could be desired—rapid recovery from the operation, complete relief from pain, great and permanent improvement of the general health.

Case IV.—A lady 38 years old, married, living in Virginia, came to Garfield Hospital June 25th, 1892, and placed herself under my treatment. She gave the following history:

Has been subject to epileptic attacks since her sixteenth year, these attacks having become more and more frequent, until

now they are of daily occurrence, except when taking bromides. Has not been well since the birth of her last child, four years ago, and for the last two years has been most of the time confined to bed, suffering from pain in the inguinal and hypogastric regions, so severe that for several weeks she has been kept under the influence of morphine. Menstruation very painful. Appetite very poor. Has been under the care of several excellent physicians, who treated her for "womb disease," but found nothing requiring operation. She was brought to the hospital on a stretcher and put to bed.

I found her apparently in great pain, much emaciated, and haggard-looking, and, on account of great tenderness of the periuterine region, was unable to make anything like a satisfactory examination. The next day examination under chloroform showed a small mass about the size of a walnut in the region of the left ovary, pressure upon which produced evidences of pain even under anesthesia. The uterus was quite freely movable, and there was a slight, healed, laceration of the cervix. While under the anesthetic I dilated and curetted the uterus, painted it with iodine, and packed it with gauze. The dilatation was difficult on account of the dense connective tissue around the cervical canal. After the examination the patient was for several hours very noisy and hysterical, but finally became quiet and rational.

No improvement followed the dilating and draining of the uterus. June 28th, with the assistance of Drs. Leech, Montgomery, and Morse, I removed the tubes and ovaries. The small mass I had felt to the left of the fundus proved to be the ovary, tube, and a piece of intestine, fastened together by adhesions. The left tube was adherent only at its extremity, the right tube free. Both tubes were much congested and contained a little pus, which oozed from the fimbriated ends on pressure. The uterine end of each tube was a solid cord. The ovaries, as you see, are small, fibrous, and contain small cysts. In the fundus of the uterus was a small fibroid.

The day after the operation I learned from a physician who had known her for a long time that she had hysteria in an aggravated form; that her attacks of epilepsy were in reality attacks of hysteria or hystero-epilepsy, amounting at times to complete insanity. I also learned from her husband that she had been out of her mind, as he expressed it, on several occa-

sions for a week or two at a time, and that she had trouble of this kind before her "womb trouble" began. She did well, however, until forty-eight hours after the operation, when she went into hysterical coma, with irregular respirations, and remained in that condition about eight hours. Temperature normal, pulse good, and no trace of albumin in the urine. She came out of the coma gradually and passed into a state of active maniacal delirium, screaming, tearing at her clothing, and trying to get out of bed. She disturbed the whole hospital so much that I had her bowels moved by enema, and then kept her for several days under the influence of morphine and hyoscine hydrobrom. Whenever she was not in a deep narcotic sleep she had illusions and delusions, complained of her nurses beating and poisoning her, screamed and groaned so as to disturb all the other patients in the ward. On the eighth day I found the wound perfectly healed and removed the stitches. On the ninth day she became quict and docile for a few hours, and I allowed her to sit up in an easy chair. Her temperature was never more than 100°, and this slight elevation was due, I think, to her nervous excitement.

On the tenth day arrangements were made to move her into a distant room where she could not disturb other patients, and all drugs were stopped. From that time she became cheerful and her mental condition rapidly improved. Seventeen days after the operation her husband, on account of a disagreement with the superintendent of the hospital as to prices, and contrary to my advice, took her home, a journey of forty-five miles by rail and five by carriage. She was at that time perfectly rational, much stronger and better nourished than when she came to the hospital, and, as both her husband and herself declared, in much better condition generally than she had been at any time during the past two years. Her inguinal pain and tenderness were gone, but she complained of neuralgic pains in her feet and legs. I have not seen her since July 15th, but have a letter from her of September 28th, in which she says: "I am getting stronger and gaining flesh every day. Have not had any more epileptic attacks nor taken any more bromides." "Oh, how thankful I am that you have relieved me of so much suffering," etc. I have heard also, through friends of hers, that she is getting strong and robust-looking. Of course not much reliance can be placed upon the tale of woe of a hysterical patient, but that this

woman had been a great sufferer was shown by her emaciated and haggard appearance, and by the fact that, under chloroform anesthesia, pressure in the region of her ovaries caused her to flinch, as well as by the vast improvement that followed the operation.

At the time of the operation I had no knowledge of the hysterical condition, and operated solely to relieve her of physical pain. In this I believe I have been completely successful, and it is interesting to note that with the improvement in her general health there has been a vast improvement also in her hysterical manifestations.

Case V.—A young married woman with one child 3 years old. Complaining of backache and right inguinal pain for two years, gradually developed and increasing. Has been an invalid for the last six months. Dyspepsia, constipation, insomnia. Examination showed the uterus drawn to the right, and any attempt to replace it caused severe pain.

Operation at the patient's house, June 10th, 1892, assisted by Drs. Middleton, Ruffin, and Phillips. Right tube adherent, left tube free, both containing a small amount of pus. The result in this case has been perfect. The patient recovered promptly from the operation and is now in good health and free from pain.

I do not wish to be interpreted as advocating removal of the appendages for every case of catarrhal or chronic salpingitis. I am certain, however, that adherent tubes or tubes containing small quantities of pus may be the cause of suffering sufficient to wreck a woman's health without giving rise to any well-marked physical signs of pelvic disease. And when the pain is great, when the general health is being undermined, when other treatment fails, I think removal of the appendages becomes not only justifiable, but a procedure that it is the physician's duty to recommend. I believe, too, that in all obstinate and unyielding cases the tubes will be found solid cords in some part of their extent, and the woman will in consequence be already sterile, so that all arguments based upon sterilization and mutilation of women are inapplicable to these cases.

My object in presenting this paper is to call attention to such cases as I have described, and to hear the opinions of others both as to the frequency of their occurrence and the advisability of the radical operation for their cure.

^{1103 13}TH STREET, N. W.

THE COMPLICATIONS OF THE PUERPERAL STATE.1

BΥ

LLEWELLYN ELIOT, A.M., M.D., Washington, D. C.

The complications of the puerperal state which I wish to discuss are hemorrhage, acute and secondary, adherent placenta, retained placenta, laceration of the cervix, laceration of the perineum, mastitis, urethral stricture, and septic infection.

Acute hemorrhage may have for its cause a relaxed condition of the uterus from uterine inertia resulting from prolonged labor, rapid delivery, or a forced labor; a laceration of the cervical vessels; or retained placenta. Its management calls for the fluid extract of ergot when the uterus is emptied, irrigations of hot or cold water, and the electric current, for inertia; the ligation of the torn cervical vessels; and the introduction of the hand, for retained placenta. It is the secondary hemorrhage, which occurs between the first three or four days and the expiration of two weeks, which calls for active treatment and causes great solicitude to the attendant. It may be due to retention of a portion of the placenta, a displacement of the uterus, or the retention of clots. Each case demands the closest examination into its cause. When the placenta or clots are the cause, the fluid extract of ergot, although commonly used for all hemorrhages, uterine and otherwise, has no place; it but increases the uterine contractions, thereby preventing the removal or expulsion of the offending matter. Here it is that the curette is to be used, thoroughly and boldly, followed by irrigations of pure water or solutions of the corrosive chloride of mercury; after the uterus has been made clean, a strip of iodoform gauze is to be pushed into the uterus and changed each day. Unchecked arterial hemorrhage calls for ligature about the circular artery.

Retained placenta frequently follows traction upon the cord or too severe pressure upon the abdominal walls during the delivery of the child, and can only be remedied by removal with the hand. Placental forceps are very good in theory, but

¹ Read before the Washington Obstetrical and Gynecological Society.

in practice they have never proved of much service to me, since the mass is so large that they cannot be made to grasp a sufficient portion; in abortions, on the contrary, where the placenta is small, they have rendered good service. After the removal of the placenta irrigation is necessary.

Adherent placenta is an altogether different complication. Here the placental attachments form part of the uterus—that is to say, they dip down into the uterine sulci; these sulci, contracting, afford a firm hold to the placental projections, and in this way make its separation difficult. There is but one treatment for this condition—that is, remove the placenta under an anesthetic. In case the attachments are not freed the bleeding will continue unchecked, for the placenta still remains a foreign body. Where the hand, which should be introduced just as often as should be necessary, and used with boldness but at the same time gentleness, fails to remove the entire placenta, the curette should be employed. The curette, to do efficient service, should be sharp, but, owing to the extreme thinness of the uterine walls, unless great care is exercised it may perforate the walls and bring us face to face with a complication more serious than the one we have been endeavoring to remedy. Having removed the placenta, either retained or adherent, it becomes necessary, very many times, to administer a full dose of the fluid extract of ergot, to apply cold to the uterine walls, or employ external pressure to cause the contraction necessary to the closure of the open vessels. These are easy matters. Cold may be applied in the form of ice passed into the uterus and retained until melted, when more may be introduced; as the hand is to hold the ice, there is not much danger of using it for too long a time. Pressure may be applied after the following manner: one hand, either the right or the left, is introduced into the uterus, and pressure made upon it with the other hand through the abdominal walls. Even after the hemorrhage has ceased an irrigation with some astringent solution—a solution of vinegar, for instance—should be employed, so as to further constrict the bleeding surfaces. For this complication electricity has been employed successfully; but, never having given the subject any study, I do not feel that I can discuss an agent so potent for good as well as for evil.

Laceration of the cervix occurs in the great majority of cases of labor, and generally receives no treatment until the latter end

of the second month, when hospital patients are directed to return for operation, should there be any symptoms calling for relief. In private practice this is not the case; patients are usually allowed to apply for operation. Now, in very many cases while a trachelorrhaphy is not necessary, in fact is not called for, there are numerous cases in which we must resort to The question whether it is proper to repair these lacerations immediately, or allow them to go on to an indefinite time before restoring the parts to a proper condition, is one of some moment. Speaking for myself, I think that where we have a good labor, in a healthy woman, it is proper to do an immediate operation, should the laceration be of such a nature as to require an operation at any future time. The uterus being emptied of all matters, it seems to me no objection can be raised to its performance. I have recently operated on one patient at the end of labor, whereas had I postponed doing so she might have suffered severely before permitting its performance. The case is briefly as follows: Mrs. S., white, aged 30 years, was delivered of her first child in September. She was a woman of good physical development. Labor lasted fifteen hours, and was finally terminated with forceps under chloroform. The perineum gave way under the passage of the shoulders, although every means had been taken to preserve it intact. A laceration of the cervix had been detected, during the labor, through the irregular zone around the child's head. After emptying the uterus of placenta and clots, it was drawn down to the vulva and two stitches passed through the lacerations, which were on either side; the perineum was next repaired, and the vagina douched with clean water. There was no rise of temperature, and when the stitches were removed on the twelfth day both perineum and cervix presented a normal appearance.

The advantages gained in these operations are, the surfaces to be united require no freshening; the woman's sensibilities are generally benumbed, either through long suffering or the anesthetic; there will be no objection raised from fear on account of the proposed operation, and the result will probably be as good as that following an operation at a later day. The same arguments apply to the repair of the perineum, where some physicians and teachers claim it is malpractice not to do an immediate operation. Upon the lacerations of the bladder or

urethra I am not sufficiently clear, but believe a provisional operation might be done here.

Stricture of the urethra, being generally of a nervous nature, requires catheterization and nerve sedatives. During its continuance the pain is excessive.

Mastitis occasionally appears, involving either one or both breasts. It generally depends upon fissure of the nipple, contusion, or energetic attempts to dry the breast. Of the prophylactic treatment, the best consists in the external applications of belladonna, camphor, or turpentine, with strapping, or the various forms of bandages in use in the several maternities. Should pus form, a free incision with drainage will be required.

Septic infection is the last complication I propose to discuss. Whether septic infection is generated within or without the uterus, and enters the system through the lymphatics or the blood vessels, is a matter of little moment; the results and the treatment remain the same. This complication arises from the presence of germs and the absorption of the products of these germs, for without this absorption there can be no infection. After labor we have a large absorptive surface, with an excess of material which from its very nature will become disorganized and be discharged through a passage subjected to traumatism. Such being the case, there should be more cases of septic infection than we meet.

The prevention of septic infection is of paramount importance, and the literature of this subject would fill volumes and require years to digest. The chief points are in having clean surroundings, a clean woman, and a clean attendant. Having obtained these requisites, we should strive to preserve them. Ordinarily this is a matter of little difficulty, and the woman is delivered without trouble and has a good getting-up. Now, on the other hand, let us suppose portions of the membranes have been left within the uterus. Things assume a very different aspect. High temperature, rapid pulse, rigor, all the evidences of septic poisoning, present themselves. In such a case there is no time to be lost experimenting with quinine, opium, antifebrin, antipyrin, or any high-grade antipyretic; these remedies but reduce the temperature and lull the physician into the sleep of false security, while the patient gradually but surely approaches her death. How many cases die from this complication of the puerperal state we will never know, but the

number of deaths recorded from it is evidence sufficient that the most approved methods of treatment are not always adopted. When we are brought to such a condition of things no time must be lost in removing the cause of the infection, and this can be done through thorough irrigation of the uterus, as thorough an application of the curette, and a drainage of the uterus with gauze, either sterilized, iodoformized, sublimated, or carbolated. Now that the uterus has been rendered entirely aseptic, antipyretics may become necessary; ordinarily they will not be needed. Irrigation must be continued and the gauze drain must be renewed as the necessities of the case demand. This is the outline of a course of treatment in a case where the Fallopian tubes have not discharged offending matter into the peritoneal cavity. Should the case be one of peritoneal infection, but one remedy is to be added to the treatment of the simpler case—that is laparatomy for the removal of tubes, ovaries, and pus, with irrigation of the peritoneal cavity. Every case of severe septic infection does not require this thorough treatment, as we all know; but the pus-filled tube, the disorganized ovary, the adhesions following a peritonitis, very many times leave a woman in that state of invalidism to which death is a wished-for relief, and from which she will not be rescued by electricity, by massage, by douches, by tampons, or by any amount of internal or external medical treatment; the case has passed beyond the influence of these measures and should be handed over to the surgeon, who performs at this late day the operation which was called for, which was demanded, in the outset of the infection. It will be said that not every woman will be willing to submit to such a course of treatment. Then she should understand perfectly the nature of the case, the possibilities and the risks of the proposed course, and the ultimate result; should she still object, we have placed the responsibility of her death or invalidism upon her own shoulders, shifting it from our own. When we anesthetize a patient for curetting we do not say how thin the uterine walls are, and should they be perforated serious result may follow, neither do we show her what instruments are to be used. At the same time the patient, as well as the family, fully realizes the serious nature of the case, and is willing to accept the results of the treatment, be they successful or fatal, as the best and the only one to be adopted. As the public becomes more and more enlightened as to the possibilities of advanced medicine, operative treatment such as has been outlined will be demanded, and all progressive physicians will be ready and willing to pursue it.

1106 P STREET, N. W.

REPORT OF A CASE OF TWO SEPARATE AND DISTINCT UTERI, CENTRALLY SITUATED AND NOT CONNECTED,

AND OF A CALCIFIED CORPUS LUTEUM.¹

BY

HANNAH T. CROASDALE, M.D., Philadelphia, Pa.

(With two illustrations.)

THE patient, et. 63 years and mother of three children, was admitted to the Woman's Hospital for treatment for an abdominal tumor.

Twenty years before she noticed some enlargement of the abdomen, and in five years it reached, she thought, its present dimensions.

No discomfort was felt (except from the size) until recently, when she experienced pain and pressure symptoms, and the bladder and rectum became very irritable.

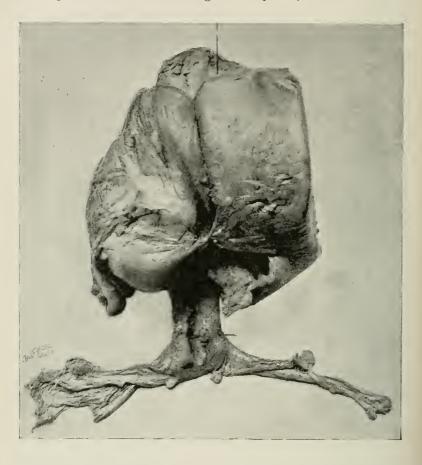
The menopause occurred at 50, and at that time the woman was confined to bed for several weeks; but there was no especial reason given for this, or she forgot just why she was in bed for that length of time. Her condition on admission was not very good, although no definite trouble could be found except a systolic heart murmur. Lungs and kidneys were in good condition.

Abdominal examination showed, on inspection, a regular enlargement. There was percussion dulness from symphysis pubis to umbilicus, and almost from crest to crest of the ilia, with a small area of tympany on the left side. The measurements as noted are as follows: from umbilicus to ensiform cartilage, 8½ inches; from umbilicus to pubic symphysis, 12 inches; from umbilicus to right anterior superior spinous pro-

¹Read at a meeting of the Philadelphia County Medical Society, January 24th, 1894.

cess of the ilium, $10\frac{1}{2}$ inches; from umbilieus to left anterior superior spinous process of the ilium, $10\frac{1}{2}$ inches.

On making digital examination per vaginam the cervix uteri seemed small, apparently having undergone senile atrophy, and it was pushed backward and high in the pelvis, the whole uterus



being pushed backward. I thought the fundus looked forward, but the uterine sound did not pass readily, hence its use was not persisted in. What seemed to be a fluctuating tumor was appreciated per vaginam to the right of the uterus and above the brim of the pelvis, and a small, tender mass was felt in the right parametrium. The patient complained of pain and tenderness when touched, especially if touched on the right side. Diagnosis, fibrocystic tumor of, probably, the uterus.

After the usual preparation the patient was etherized and the abdominal cavity opened. On opening the peritoneal cavity the omentum was found to be greatly thickened and congested, and extensively attached to the tumor beneath it and to the pelvic walls. It was necessary to ligate and cut in many places, and upon pushing the omentum aside the tumor looked pale and it felt and looked like a fluctuating mass. A trocar and canula being used, I was surprised that no fluid flowed through the canula. The incision was now extended in the abdominal wall upward sufficiently to admit of the withdrawal of the mass entire. A small, nodular mass attached to the lower part of the tumor, having the shape and size of the uterus and being furnished with what seemed to be the uterine appendages, was drawn out of the lower end of the wound, and was found to be attached by a small, cord-like pedicle to the pelvic brim a little below the crest of the left ilium. Another body, to all appearances a uterus with its appendages, was found in the pelvic cavity and fixed by the usual attachments, but had been crowded into Douglas' pouch. The slender pedicle, not larger than a pencil, which tethered the smaller mass to the pelvic wall, was ligated and cut.

The tumor being now freed from its attachments, which were omental entirely, was lifted from its bed. This tumor must have derived most if not all its nourishment from the establishment of the circulation through the omentum, for it had almost severed its attachment from other structures, and the omental vessels were enormously enlarged. There was no connection whatever with the uterus in the pouch of Douglas.

The abdominal cavity was cleansed and the opening closed with silk sutures, the dressings applied, and the patient was put to bed. Reaction was prompt and good. The temperature for the first four days ranged from 99° F. to 100.4° F; it then rose, and on the sixth day reached 102.6° F., and on the ninth day 105.4° F., when she died of sepsis. The autopsy showed purulent infiltration at various points in the pelvic cavity. There was also found at the autopsy a uterus and its appendages in a healthy condition and in the proper position. Sections from the little body which hung from the large tumor were sent to two pathologists. One reported the specimen as being a fibromyoma. The other pronounced it uterine tissue and some structure resembling the endometrium. If this is a

separate and distinct uterus—and I think it is—it is an unusual case, a unique case.

We know that bodies which are not properly situated are not well organized and very readily take on disease. This second nterus had developed from its cervix this fibromyoma. As it grew to be too large for the pelvic cavity and rose above the brim, the little organ was inverted and so hung suspended from it. It measures from the internal os to the fundus one and one-quarter inches. The length and size of the cervical portion are exaggerated evidently, from the tension upon it. It was cut open, and in the fresh state showed quite distinctly the arborvitæ arrangement of the mucous membrane lining the canal, and the lips and cervical canal were quite natural in appearance. The os uterinum on the left side admits of the passage of a small probe, which passes a short distance along the Fallopian tube. On the opposite side the opening would not admit the probe.

There are two ovaries, small, which on being cut open showed on macroscopical inspection ovarian tissue. No microscopical examination of this tissue has yet been made.

In the cervical canal, just below the os internum, is a small calcareous deposit.

The didelphic uterus we have seen, and these cases are actually two uteri, separated as far as the cervix, and including it, and not two bodies more or less divergent, as in the case of the uterus bicornis.

Ollivier's specimen of a uterus didelphys and divided vagina, with a distinct cervix uteri looking each into its own vagina, was taken from a woman who had been pregnant five times. Each segment presented the appearance of a complete uterus, seeming to be two unicorn uteri equally developed and apposed without fusion. Bonnet and Heitzmann had cases similar. In these cases it is reported there was but one set of appendages to each uterus, and but one broad ligament.

It used to be thought that this malformation occurred only in non-viable embryos with deformities of other organs. It has been seen with ectropion of the bladder, with imperforate anus, and other malformations. But an entire organ, far removed from one in the usual location, I have not seen mentioned.

Calcified Corpora Lutea.—Another specimen is this little body, which I at first thought was a lithopedion, but, seeing

Bland Sutton's note on calcified corpora lutea, find it to correspond very closely with the description of two specimens which had been sent to him at about the same time. He considered them very rare pathological specimens. Dr. Voelcker secured one from an ovary of a woman who died of mammary cancer very widely disseminated, and he supposed the two little bodies





Calcified corpus luteum.

in the ovary to be secondary deposits, but, cutting into them, found them to be concretions. One was encysted and had outwardly the appearance of mulberry calculus of the bladder; the other was embedded in the ovarian tissue and was of irregular shape.

When this specimen which I now show was fresh, it was of a bright-yellow color, very characteristic of a recent corpus

luteum. It cut in some parts of it as would wax—perhaps of firmer consistence.

Those specimens which Bland Sutton describes consisted of dense tissue impregnated with lime salts. Mr. W. A. Meredith speaks of examining a patient and distinctly feeling the hard body through the vagina, and it gave rise to the impression that the swelling might be the sac of an ectopic gestation containing fragments of bone. Dr. Coe, of New York, recently described a similar body under the impression that it was a bony nodule.

1525 WALNUT STREET.

THE CAUSES OF SHOULDER PRESENTATION.

WITH THE REPORT OF A CASE.

 $\mathbf{B}\mathbf{Y}$

SIGMAR STARK, M.D., Cincinnati, Ohio.

I PRESENT this case with the view of eliciting a discussion as to the causation of shoulder presentation. In the majority of text books this subject receives but very little consideration, and the opinions regarding the importance of the various agents at play are diverse.

April 17th, 1891, I was called to see Mrs. S., æt. 22, primipara. Upon my arrival I learned that she had been in actual labor about three hours, the pains having been severe only the last three-quarters of an hour. Upon examination I found an elongated pouch, containing the right upper extremity, presenting at the vulva. There was almost complete dilatation of the cervix. Bimanual version was resorted to, the membranes ruptured, and a small child weighing hardly four and a half pounds was extracted by the foot; the procedure, all told, not occupying more time than it takes to tell it. The subsequent course of the puerperium was normal, the child also developing well.

Two years and a half later I was summoned in haste to see her, and found that the membranes had ruptured and that the woman was in great pain. An examination disclosed transverse presentation with prolapse of the whole upper extremity, beginning impaction of the shoulder, and the umbilical cord dangling

outside of the vulva. Dr. Schwab was at once sent for, and came in a few minutes. As soon as the patient was anesthetized I performed internal inversion. This time a more serious state of affairs confronted me. The patient was at full term, the child evidently a large one, the liquor amnii drained away, the os about the size of a half-dollar, allowing hardly sufficient space for the introduction of two fingers alongside of the prolapsed funis and arm. After I had finally succeeded in getting my fingers within the uterus, another obstacle presented itself in the form of successive coils of umbilical cord. All this time I had the horrible picture of an impacted shoulder presentation before me, and minutes seemed hours. I finally succeeded, with the aid of the external hand, in reaching a foot, and then turned as quickly as possible, bringing the leg well into the vagina. After a futile attempt to replace the cord, extraction was proceeded with as rapidly as possible, this probably taking about five minutes. An asphyxiated child was delivered, which resisted all efforts at resuscitation except that of direct inflation of the lungs, which finally proved successful. The child (a tenpound boy) breathed peacefully but superficially, and, its pallid color not improving, I administered oxygen gas. This proved to be of no avail, and the child rapidly sank, having lived about eight hours. The mother made an uneventful recovery.

The malposition in the first confinement is probably referable to the prematurity and smallness of the fetus. Its recurrence I cannot account for, as none of the factors which I am about to mention were operative.

If we accepted the teachings of the patriarchs in medicine there would be no difficulty in explaining the cause of fetal posture in labor. The doctrine of Hippocrates and Aristotle that the fetus sat upright, with its back toward the spine of the mother, until the seventh month, when it either suddenly or very gradually rotated so as to assume the opposite position, held sway for many years, and had as its exponents Æsculapian disciples of such renown as Mauriceau, Fielding, Ould, Levret, Stein, and others. It remained for Realdus Columbus, Lamotte, Smellie, Solayrés de Renhac to point out the fallacy of this view.' Equally fallacious were the teachings of Paré and Dubois that the fetus instinctively assumed a normal position.

Playfair,³ while acknowledging with most authors the diffi¹Small figures refer to bibliography at the end of the article.

culty in determining the cause in the majority of instances, considers the following conditions as predisposing thereto:

- 1. Prematurity of fetus and small fetus.
- 2. Excess of liquor amnii.
- 3. Undue obliquity of the uterus.
- 4. Low attachment of the placenta.
- 5. Irregularity in the shape of the uterine cavity—i.e., relative increase in its transverse diameter.

He adds that it is more common in multiparæ than in primiparæ, and that accidental causes exert great influence, as falls, or undue pressure exerted on the abdomen by badly fitting or tight stays.

Cazeaux and Tarnier 'add distortions of the superior strait to this list. How such an accident can happen in the case of a premature or small fetus we can readily conceive. The influence that an excess of liquor amnii exercises is variously explained. The common view is that on this account the fetus has more freedom of motion, and is therefore more apt to be in an abnormal position at the time of rupture of the membranes, which is liable to occur prematurely on account of the increase in pressure. This may also induce irregular or partial contractions of the womb, a view entertained by Naegele 'and Korman.' Finally, the hydramnios changing the normal ovoid form of the pregnant uterus into a globular one enables the child to more readily lie in its transverse diameter.

An undue obliquity of the uterus is supposed to favor the descent of the head or breech outside of the axis of the pelvis, thereby allowing the presenting part to glide to one side over the pelvie brim.

A low attachment of the placenta, by encroaching upon the space naturally designed for the head, may cause its deflection to one side. Primary irregularity in the shape of the uterine cavity—that is, a relative increase in its transverse diameter—is a factor emphasized by Danyau and Wigand. This change in shape Spiegelberg considers to be the expression of a uterus bicornis or a uterus arcuatus—a condition which he regards as proven by Becker. This view is entertained by Joulin, Naegele, and Meissner, who reports the case of a woman whose first child was born with a head presentation, and who subsequently gave birth to eleven more children who primarily occupied a transverse position.

The manner in which accidental causes act is also obvious. Matthews Duncan 11 reports that out of 15,533 births in the Dublin Lying-in Hospital, the ratio of shoulder presentations was 1 to 555 births in the cases of living children, and in the event of premature death of the fetus, 1 to 88. Is this to be ascribed to the loss of reflex action on the part of the fetus, as explained by Sir J. Y. Simpson, 12 or to its small size?

Siebold ¹³ considers flanging ilia as predisposing factors, likewise the wrapping of the funis about the neck of the child, thereby interfering with the descent of the head. Shoulder presentation is also apt to occur in the second-born in the case of twins, and is explained by the laxity of the uterine walls which is apt to exist under such circumstances.

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A PECULIAR MONSTROSITY.

BΥ

C. S. HOFFMAN, M.D., Keyser, W Va.

(With one illustration.)

Nor long ago I attended a lady in confinement at full term who gave birth to an ectromelic monstrosity weighing ten pounds, which the accompanying cut partially illustrates.

The abnormalities of the child, beginning from above down,

consisted, 1st, in its being hydrocephalic. 2d, The left external ear was very rudimentary, while the right external ear was normal. 3d, The left eye was very small, and the opening in the orbicular muscle was only about one-third that of the right eye, which appeared normal. 4th, Both arms terminated at the lower end of the humerus, the radius and ulna being absent; but where these two bones should join the humerus, forming the elbow joint, is joined an imperfect hand having only three fingers on each hand, as shown in the illustration, these fingers resembling most the little, ring, and fore fingers. 5th, The child is a



bilateral hermaphrodite, having a testicle upon each side in a closed sac. The penis is very rudimentary and looks much like an enlarged clitoris; just back of it is an opening as large as a small crow's quill, into which a probe can be passed one-third of an inch. 6th, The anus is imperforate, the continuity of the skin being unbroken. 7th, There is a talipes calcaneus of the left foot. In other respects the child is well developed. The child was born dead, but the mother said she felt it alive shortly before birth. Both parents were healthy and could assign no reason for the arrested development of the child. They had two other children, both of whom were well developed and healthy. Neither of the parents was aware that any other malformed child was ever born to any member of their families.

THREE ILLUSTRATIVE CASES OF ABDOMINAL SECTION.

BY

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(With three charts and three illustrations.)

A STUDY of the "grand totals" does not always furnish the oft-desired knowledge. Thorough digests of carefully selected cases are object lessons, the impressions of which sink deeply into the mind of the reader. Truthful compilations of the whole work, correctly recorded and properly understood, are by no means to be deprived of their value. For these, after all, determine the general rules and shape the special action. Not alone the failures, but likewise the successes, should stimulate thought which should tend to remedy our mistakes and still further improve our methods. This can be accomplished by experience and reflection alone.

The three cases herein referred to were taken from a number lately operated upon. Each bears its individual peculiarity, and the three tend to illustrate the perfection and imperfection which characterize our work in this direction.

Case I.—Miss X., age 35 years. Was first seen by me in the autumn of 1892. She gave a history of menstrual irregularity dating back about five years. Then, and during several intervening periods extending through the past five years, she suffered more or less from profuse menstrual discharges. About the same time an abdominal enlargement was observed. This continued to grow until it reached the enormous proportions herein described. From extreme modesty an examination was positively refused to others as well as myself. From the history and an imperfect palpation through a wrapper (the privilege of the latter being only obtained after considerable solicitation) I expressed the opinion that the tumor was a large ovarian cyst, and gave a hopeful prognosis. This exactly harmonized with the views of those who preceded me in the case. An operation was advised, but met with flat refusal.

At this time the patient by careful management was still able to pass a large portion of the day in a chair, and even employed herself with some needlework.

The abdomen had by this time grown to an enormous size. The circumference measured almost five feet. Above, the ensiform cartilage was curved up similar to the hook of the letter J. Below, there protruded from the vagina a portion of the growth, which afterward proved to contain more than half a gallon of fluid. This was subsequently found to consist of a separate cyst, which had pushed the posterior vaginal wall down. It was not long that she continued thus; some days after seeing her I was again called, to find her in great distress from an onset of bil-



Fig. 1.—Showing size of vaginal protrusion after the removal of half a gallon of fluid.

ious vomiting which enfeebled her very much. She had in the past experienced several such attacks, but none of such severity. At that time the recovery from the attack was only partial.

The advisability of an operation was again advanced. After considerable hesitation, during which the demands for relief became imperative, she finally consented. Without further preparation she was removed, in great distress, to the Norton Infirmary. When placed upon the operating table the pulse was very rapid and feeble. The anesthetic was administered with the patient lying upon the side. An incision of about four inches was made through the abdominal wall. This allowed the

escape of about a quart of fluid and the exposure of the tumor. An attempt was made to introduce a Tait trocar, but without success. The growth was incised, and explored to the depth of the index finger without detecting any fluid. As much exploration was made in a lateral and upward direction as the patient's condition would permit, but again without success. Further steps were unjustifiable; the wound was carefully closed, padded with bichloride gauze held in place by broad adhesive strips. She was returned to bed in a feeble condition. From this she soon rallied. While upon the operating table an examination was made of the vulva, which was entirely covered by the overlapping of the vaginal protrusion. The urethral orifice was found to be edematous and in a state of sphacelation. She made a rapid recovery from the exploratory incision. From this for a period extending over eight months nothing of especial interest was noted, only that the condition had bettered itself very much. At this time an aspiration of the vaginal protrusion was made. This yielded a little more than a quart of fluid. Later another examination of the abdomen was made and aspiration of the upper zone performed. Three gallons of fluid were drawn off, affording great relief to the respiration. This was followed in two weeks by a second aspiration, in which two gallons more were obtained, making in all five and a quarter gallons. This fluid was of a light straw color, highly albuminous, and of a specific gravity of 1.005.

The patient was now placed upon a careful tonic treatment extending over several months, and was again able to rise, walk about, and do light work. She was again removed to the Norton Infirmary, and, after a few days of preliminary preparation, submitted to a second celiotomy. Previous to the operation another attempt at the reduction of the vaginal protrusion was made, with only partial success. Aspiration yielded one and three-quarter pints of fluid. An examination of the urine yielded negative results.

Everything being in readiness, the operation was begun with an incision of about six inches, made just above the former opening. Adhesions of a universal nature were noted. These were of such a character as to readily give way to the sweep of the hand, which was rapidly carried in all directions. The omentum was adherent above to the remnant of the mammoth cyst. The incision was now enlarged upward and downward

until almost the whole abdomen was laid open. The solid portion of the tumor was seized with a mammoth volsella forceps. Dr. Vance, who assisted me, made traction upon this with one hand while the other was engaged in drawing the abdominal

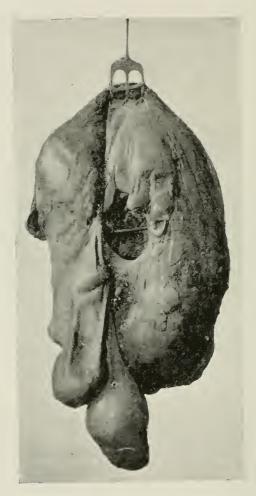
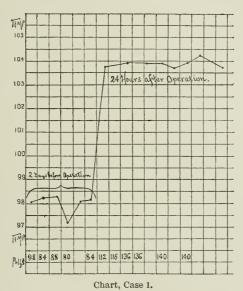


Fig. 2,-Fibrocystoma of uterus.

wall outward and downward. I did the same on my side with one hand while the other was occupied in freeing posterior adhesions. Just as the whole was about separated and emerging free of the abdominal wall, the remnant of the large cyst ruptured, emptying a brownish-green, flaky fluid partly on the out-

side and partly within the abdominal cavity. A portion of the ruptured cyst was subsequently peeled from the omental adhesions. The tumor was now rapidly cut away from the fundus of the uterus, which it surrounded. The remaining cavity was of such size as to afford ample room for both operator and assistant to work rapidly therein. The tying-off of the adhesions and the cleansing of the abdomen required but a few minutes. The uterine fundus was encircled with a serre-neud, and the incision closed with a continuous suture. Drainage was employed. The operation, from the incision to the complete



suturing of the abdomen, occupied twenty-eight minutes. The patient was removed in profound shock, from which she emerged in two hours, after the diligent application of external warmth and the use of different stimulants hypodermatically. She survived the operation twenty-four hours, during which time she rallied completely and for quite a number of hours presented a hopeful appearance. The drainage tube yielded throughout the twenty-four hours eight ounces of very bloody fluid. The behavior of the pulse and temperature is observable in the accompanying chart.

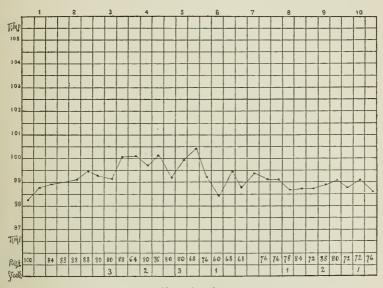
Autopsy.—Within an hour after death the abdominal cavity presented an empty appearance. The spine for a very large distance was uncovered. The intestines and spleen were crowded

up under the short ribs; the cavity contained here and there small accumulations of blood, amounting collectively to perhaps six ounces. The total weight of the tumor, after a careful estimate, amounted to seventy-six pounds.

While not attempting to deny the possibility of a hundred-pound tumor, or even one larger for that matter, yet it was very evident from this case that there would be a marvellous shrinking of such if the operator would substitute an accurate balance for his fevered imagination. When a tumor reaches such proportions there remains little room for increase. This case was seen by Dr. Howard Kelly, of Baltimore, who likewise commented upon its enormous size. For one who has not yet attempted to estimate the size of tumors it is difficult to realize their deceptive nature. No amount of experience, care, or observation will entirely remove the mists of uncertainty that hang about a diagnosis made without ocular inspection or actual digital manipulation. In view of this the operator should stand ready to meet, off-hand, any unexpected condition that may arise.

Case II.—F. X., of Kansas, age 27, referred to me through the kindness of Dr. L. W. Eckels. Gave a history of abortion, since which she has complained of pelvic pains, together with profuse and painful menstruation. External palpation elicited pain, especially over the right ovarian region; left side was also painful, but not to the same degree as the right. Inspection negative. On bimanual examination a marked shallowness of the vagina was noticeable, together with an abnormal fulness upon each side of the fundus. The uterus was almost immovable, but otherwise normal. By combined manipulation the enlarged ovary could be felt upon the right side; on the left side an indistinct mass was made out. An abdominal section was advised and accepted. She was removed to the Norton Infirmary, and, after a few days' preliminary preparation, submitted to the operation. The urine was examined prior to the operation, and found to be below normal in specific gravity and decidedly albuminous. I regret that unavoidably a microscopic examination was not made. Upon opening the abdomen about three pints of a dark fluid were found in the pelvis and the lower part of the abdominal cavity. This was mostly removed by sponges; some, however, receded to the upper part of the abdomen, forcing the intestines into the operative space. The

ovary and tube upon the right side were sought for and found deep in the pelvis. They were brought into view, and the ovary found to be cystic. After some trouble, owing to a very short and thick ligament, they were tied off and removed. Upon the left side the tube was in a considerably distended and adherent state. It was carefully separated, whereupon pus rapidly welled up into the cavity; this was sponged away and the cavity cleansed. The walls of the latter were completed by the broad ligament, tube, ovary, and the uterus, the whole being covered with a light-colored, closely adherent, necrotic mem-



Chart, Case 2.

brane bathed in pus. The mass was removed with the utmost difficulty; the structures were of such a friable nature as to tear upon the slightest provocation. Repeated ligation became necessary before the parts could in any wise be considered safe from hemorrhage. Finally those parts still covered with portions of necrotic tissue were thoroughly cauterized with pure carbolic acid; the pelvis was carefully flushed and sponged out; the infected cavity was packed with strips of iodoform gauze drawn through the drainage tube and so arranged that they could be removed through the same avenue. The operation, from the time of the incision to the completion of the dressing, consumed one hour and fifty minutes. Just as the

patient, at the closure of the abdomen, was lowered from the Trendelenburg's posture to the horizontal, a gurgling noise was heard, which later proved to be a portion of the original fluid that had receded to the upper part of the abdomen and was returning with the change of posture. She was removed from the table with practically no shock. Her recovery was uninterrupted. The gauze was removed at the end of eighteen hours, and the remaining fluid drawn off by means of a syringe. The



Fig. 3.—Fibromyoma of ovary.

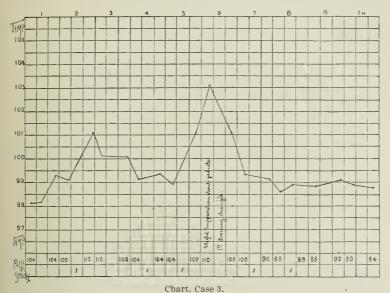
drainage tube was removed at the end of the third day; during this time forty-two drachms of fluid, varying from a very bloody to a light color, were drawn off. The stitches were removed on the sixth day, primary union being completed with the exception of that portion occupied by the tube, which was granulating rapidly.

Pus is not always pus in the sense of infection. Often we see opportunities for infection from pus, and still none occurs. In this case there was, from the amount of pus, its distri-

bution, and the remaining of necrotic structure, ample room for infection, and still the case continued a practically aseptic course. On the other hand, we observe contents of cysts that produce the most violent and fatal septic processes.

The clinical history here did not indicate the extensive inflammatory and suppurative changes that were found upon the operating table. In fact, a surgical attendant at the institution she had just left declared that an operation was uncalled for.

Case III.—L. J., colored, age 35. Was referred to me through the courtesy of Drs. Simpson and Heuser. The appa-



rent origin of the enlargement dates back a number of years. During this time she suffered very much from profuse menstruation. By inspection an abdominal enlargement was noticeable which occupied the middle of the abdomen. The upper limit reached a point about midway between the umbilicus and the ensiform cartilage, and extended well over upon each side. In its manipulation no mobility whatever could be detected. By vaginal examination the cervix was drawn high up, firmly fixed, but normal in appearance. Taking the whole together, it presented more the appearance of a uterine than an ovarian tumor, and this view was corroborated by others who had also seen the case.

Operation was advised and readily agreed to. A high explo-

ratory incision, out of the reach of the bladder, was made. During the exploratory maneuvring a free hemorrhage ensued which necessitated a larger incision and the completion of the operation. The incision was extended upward to within a short distance of the ensiform cartilage, and cautiously downward. The tumor was firmly bound to the abdominal wall by means of a broad, thick band. Above, the omentum was generally adherent. The omental vessels were varicosed to the size of the little finger. The adhesions were rapidly divided between a pair of broad clamps. At the level of the pelvis other adhesions of less difficulty were encountered and rapidly dealt with. The tumor, which proved to be of ovarian origin, was delivered and cut away. The adhesions were tied off, cavity flushed, and the stump fixed externally. No drainage. Total time consumed, forty-eight minutes. The patient was removed in an excellent condition and made a practically uneventful recovery. The tumor weighed fourteen pounds and was of a fibromyomatous character.

In closing, I beg to express my thanks to Drs. Bullock and Skinner, and Mr. W. Stuber, to whom I am indebted for the negatives from which the illustrations have been prepared.

507 2D STREET.

TRANSACTIONS OF THE ALUMNI ASSOCIATION OF THE WOMAN'S HOSPITAL IN THE STATE OF NEW YORK.

NINTH ANNUAL MEETING, HELD JANUARY 16TH AND 17TH, 1894.

(Abstract.)

The President, W. GILL WYLIE, M.D., in the Chair.

PYELITIS AND PYONEPHROSIS IN WOMEN, WITH A REPORT OF A CASE OF EACH.

By Dr. James N. West.—The report was preceded by some remarks upon the causation, pathology, symptomatology, and treatment. In considering the causation, he wished especially to refer to the close relation between pyelitis and cystitis, the similarity of the symptoms, and the fact that such cases were especially amenable to treatment. It was often very difficult

to determine whether the pathological process had begun in the bladder or in the kidney, for when the patient came under observation the pyelitis was generally associated with cystitis. Normally the course of the ureter in the walls of the bladder was about one inch, but this distance might be increased by inflammation and thickening of the walls to perhaps an inch and a half. The diseased bladder and ureters then offered an obstruction to the normal flow of urine, which had to be overcome by contractions of the ureters and pelves of the kidneys. This explained the renal tenesmus experienced in cystitis. Gradually more and more urine ceased to be expelled, underwent decomposition, set up inflammation; pus and mucus formed the basis of phosphatic concretions, which in turn constituted further obstructions and sources of irritation. Dwelling on the differential symptoms between pyelitis and cystitis, he said examination of the epithelium in the urine was of no aid, for the deep epithelial cells of the mucous membranes of the bladder and ureter were elongated and appeared like columnar cells, and the transitional cells of the bladder, when inflamed, resembled the normal epithelium of the pelvis of the kidney. In one of the two cases reported he had examined the epithelium of a large number of specimens and found no characteristic cells to determine the location of the lesion. bladder was thoroughly irrigated, the urine allowed to collect a few minutes, then drawn and examined. A large quantity of pus and epithelium was found, which, with renal colic and pain in the left side, led to the diagnosis of pyelitis. There might be a tumor to establish the diagnosis. Speaking of catheterization of the ureters by the method perfected by Howard Kelly, this might seem simple when performed by Kelly, but he had known an expert to fail after a trial of more than half an hour. The method practised by Nathan Bozeman was more direct. Through the opening made at the base of the bladder treatment could also be applied by antiseptic irrigation of the pelvis of the kidney. Where cystitis was the first cause the drainage and local treatment through the wound relieved the bladder tenesmus and allowed the inflammation and thickening of the walls to subside. Where disease of the kidney was not too far advanced it was an ideal method of treatment. Dr. Bozeman had thus cured patients. If the disease was advanced, do nephrotomy, and finally, if necessary, nephrectomy.

The first of the two cases reported was that of a woman, aged 49, who entered Dr. Cleveland's service September 19th, 1892. Her symptoms were severe pain, beginning in the left lumbar region, extending to the bladder and urethra, into the left hip and down the thigh, and accompanied by frequent desire to micturate, by chills, and by fever. The urine contained much sediment, consisting of pus, epithelium, bacteria, triple phosphates, twelve per cent albumin, no sugar. The left kidney was some-

what enlarged and movable. December 10th Dr. Cleveland operated, exposing the kidney through an incision along the left quadratus lumborum. Palpation was negative, except that the kidney was found loose in its attachments. The needle only showed a dilated pelvis. An opening was made one inch and a half along the free border, and pus flowed out. Nothing was felt with the probe and finger. Hemorrhage was free. The kidney wound was packed with iodoform gauze, the space behind was drained with two rubber tubes, the kidney was fastened by silkworm suture to the abdominal wall. The patient rallied from shock. Pus and urine drained from the tubes. On the seventh day an attempt was made to pass methyl blue through the tube into the ureter and bladder, but the ureter seemed to be impervious. Finally, January 7th, the kidney was removed. The patient gradually regained health and was discharged

cured in May.

The second case was one of pyonephrosis in a woman of 30 years, who entered Dr. Nicoll's service November 17th, 1892, having been sent by her physician for an operation upon the left kidney. She had had about ten attacks of apparently renal colic the past four years. Urine had been cloudy six months, the cloudiness being greatest during the intervals between the pains. Examination of the urine showed twenty per cent albumin, sediment of pus and epithelium. The patient was much emaciated, very weak, had evening rise of temperature to 100° or 102° F. Large mass in left lumbar region, probably enlarged kidney; small mass in left pelvis, probably an adherent ovary. December 9th Dr. Nicoll operated. Median incision of five inches, commencing at umbilicus. Tumor felt; peritoneum was incised at the left of the colon and the tumor (the left kidney) was shelled out. The ureter was ligated by catgut, the renal vessels by silk, and the kidney was excised. The silk ligature slipped and free hemorrhage followed, but was checked by applying another ligature. A counter-opening was made from the bed of the kidney to the skin and a large rubber drainage tube was inserted. The adhesions of the left ovary were broken up. The patient was in profound shock, but under stimulating enemata, hypodermics of brandy, and inhalations of oxygen, rallied. Recovery was then uninterrupted; the urine became normal; health was restored. But little kidney tissue was left in the tumor, which was converted into a series of pus cavities.

THE PRESIDENT.—The subject of the surgery of the kidney has interested me many years, that interest having been aroused incidentally by two facts. In the first place, a case would come to me now and then for supposed uterine trouble, and on examination this would be found only of minor importance, the chief trouble being due to disease of the kidneys. Secondly, the general surgeons in this country, as far as I could learn, had removed up to that date but one kidney successfully. That

case was operated upon at Bellevue Hospital by Dr. J. Williston Wright. In addition, one or two kidneys had been removed by other surgeons who had supposed they were dealing with some other form of tumor. I saw Dr. Sands operate in one case. He worked through a small opening behind, inserting his arm. It looked like so formidable an operation, compared with those in abdominal surgery, that I made up my mind to operate anteriorly, should a case come under my care.

In my first case the tubercular kidney was removed through an anterior incision, just as if it were an ovarian tumor. Altogether I have removed the kidney eight times with two deaths.

I have cut down upon and drained the kidney in sixteen other cases. With the exception of three or four they were all taken from my gynecological service. Three were sent me as cases of kidney trouble. Some of the others had been treated for uterine

disease as long as two years.

DR. ANDREW F. CURRIER.—The differentiation between disease of the kidney and of the bladder is extremely difficult. The relation of diseased kidney to abdominal tumors is also sometimes extremely difficult to make out. As well as I can remember, the first case in this country of recovery after removal of the kidney occurred in the service of Dr. Thomas at the Woman's Hospital. The operation was performed for ovarian tumor. The kidney was intimately adherent to the tumor, and during the operation was, of course, removed with it. The patient recovered.

Cases in which kidney disease exists are almost certain to show coexistent bladder disease, and the latter may be the cause of the more salient symptoms. That fact is an important one in its bearings upon treatment, for the course to be taken is to open the bladder and thereby permit of free drainage of both kidney and bladder, and thus obviate the necessity for performing the severer operation. Unless, therefore, the indications of advanced disease in the ureter and kidney are very clear, the course for the gynecologist to pursue is to open the bladder and obtain

free drainage in that way.

Dr. Bache McE. Emmer.—It seems to me that our attention should be directed toward making a more complete examination of the pelvis in a given case than it may have been our custom; that we should not be satisfied with finding only one symptom or one lesion when further examination may reveal others. It is undoubtedly true that lesions of the kidney often arise from disease of the bladder travelling up the ureter to the pelvis of the kidney. It is also beyond doubt, however, that a neoplasm or some disease of the kidney or ureter may be the primary or more important disease, when the physician's attention is directed chiefly to the bladder because of the prominence of the vesical symptoms.

A CASE OF EXTRA-UTERINE PREGNANCY.

By Dr. E. L. H. McGinnis.—The patient was about 33 years

of age, married eighteen years, mother of three children, and first visited him April 15th, 1893. She had menstruated regularly. She had come to learn the cause of a dull, severe pain in the left inguinal region and of nausea which had lasted two weeks. There had been half a day's flow five weeks previously; none one week previously, which was the proper time for her menses. Careful examination revealed a fluctuating mass at the left of the uterus, exquisitely sensitive on pressure, giving a distinct sensation of something floating in the mass. Taking into consideration the lack of flow, the nausea and pain, he became convinced it was a case of tubal gestation. Dr. Cleveland examined the patient and agreed in the diagnosis, and expressed the opinion that the tubal pregnancy was probably nine or ten weeks advanced. Dr. McGinnis had on former occasions expressed belief in the use of the galvanic current for killing the fetus in the tube up to the end of the third month, and employed it in this case. A ball electrode was placed at the left of the cervix, connected with the positive pole of the galvanic battery; a clay pad was placed on the abdomen and connected with the negative pole. A current was turned on up to sixty milampères for ten minutes, broken at intervals of a second, repeated daily for four days, but reduced in strength at each successive séance. At the end of the fourth day the faradic current was substituted, with the view of hastening absorption. At the end of ten days Dr. Cleveland saw the patient again with him, and they agreed that there had been diminution of the mass to about two-thirds of its former dimensions, which had been somewhat longer than a hen's egg. The patient had suffered very little if any pain, and seriously objected to remaining in bed. The treatment was continued daily until May 23d, when he operated on a rectocele. Five days afterward the nurse told him that the patient had had one sharp, cramp-like pain in the left groin, followed ten minutes later by the discharge per vaginam of about half an ounce of black, putrid matter resembling decomposed flesh, and a few drops of clear blood with some odor, which continued to come away by drops for about twelve hours. No pain followed, no symptoms of shock, or rupture of tube, or septic trouble. Some days afterward, when removing sutures, the mass was found to have entirely disappeared; only moderate tenderness remained.

Dr. McGinnis had recently treated a similar case of tubal pregnancy with galvanism, the result being perfectly satisfactory, as in the present case. He did not doubt the diagnosis, and thought others would not had they seen the cases. He referred to the statistics collected by Dr. Brothers, showing but one death—Janvrin's, 1886—in seventy-eight cases of ectopic gestation treated by electricity without puncture, and in Dr. Janvrin's there were marked symptoms of hemorrhage before the current was resorted to. After the third month one should always be prepared to operate.

Dr. Bache McE. Emmet said: All know the possibility of a mistake in diagnosis in a case of this character. In performing laparatomy a form of hematoma is often found where we had expected to come upon extra-uterine gestation. I operated upon such a case two weeks ago. There was a history of irregular menstruation, tumefaction of the Fallopian tube was felt, and I supposed I had to deal with a case of extra-uterine feta-There was some oozing, and I treated the patient at first by douching the uterus and curetting; but the little oozing persisted, the mass remained and appeared to be developing. Everything pointed to implantation of the ovum in the tube on that side. After the lapse of about three weeks the temperature and pain began to give evidence of decomposition in the mass, and I therefore decided to operate, and two weeks ago removed both appendages. I should have said that galvanism was tried, after which a quiescent state seemed to point to a satisfactory result, from this treatment. But the bleeding recurred, the temperature increased, then a tablespoonful of dark-colored discharge came from the uterus. The symptoms became somewhat aggravated. Tumefaction appeared on the other side, which led me to conclude that a salpingitis had crossed over to that side also, but the tumor on the left, or side first affected, became reduced in size. At the operation the mass on the right side was the larger, was formed of the convoluted tube and some disease of the ovary; the whole, as large as one's fist, being somewhat difficult of removal. On the left side, where it had been supposed there was implantation of the ovum, there was only a hematoma which had become broken down and purulent, containing no evidence of the extra-uterine fetation, which I now doubt had ever existed.

I believe, therefore, that cases of hematoma are being constantly treated as extra-uterine fetation, and if the latter condition had actually existed the contents of the sac would be liable

to become broken down and lead to danger.

Dr. James R. Goffe.—The case seems to be a pretty fair type of the class which the electricians are constantly reporting as cases of ectopic pregnancy treated by galvanism. I think the weak point in their position relates to the diagnosis. I have been on the lookout myself for cases of ectopic gestation; I am alive to the possibilities of the condition, but I have yet to see my first case since leaving the hospital as interne. I have seen a number of cases which I supposed to be ectopic gestation, and the diagnosis was confirmed by consultants; but on operating they proved to be simply cases of hematoma, such as the case described by Dr. Emmet.

Dr. A. P. Dudley.—The author recommends electricity up to the fourth month of ectopic gestation. To my mind that is a most dangerous recommendation. If electricity is used it should be only at a much earlier period. At the fourth month

the sac has attained such a size that there is great liability of rupture.

Dr. Thomas Addis Emmet expressed doubt as to the correct-

ness of the diagnosis.

DR. H. T. HANKS.—I doubt whether electricity should be used at all after the third month of ectopic gestation. I do believe, however, that those who have had experience in obstetries and gynecology can make a diagnosis earlier and with much more certainty than might be inferred from Dr. Emmet's remarks. During the time that I have been in service at the Woman's Hospital I have operated in three cases, and the pathologist proved the diagnosis of ectopic pregnancy. In one case I used electricity and destroyed the ovum in the tube. After eighteen months the patient became pregnant in the opposite tube. This time I operated because she was bleeding, removed the ovum on that side, and observed the exudation and thickening left in the tube first affected. I therefore think Dr. Emmet's experience in this direction is not that of the obstetrician, but that of the gynecologist. I believe also that the hematoma spoken of by Dr. Bache Emmet is often the result of a ruptured tubal pregnancy, and we would be perfectly justified —especially would the general practitioner be perfectly justified—in resorting to electricity before the third month of ectopie pregnancy. Up to the eighth week, at least, the practitioner might use electricity until he could obtain the services of a laparatomist. For the gynecologist who can work as safely as twenty-five in this city could do, galvanism might be unnecessary in the destruction of the ovum; but that this agent would succeed up to a certain date I fully believe, for I have destroyed the ovum with it in three or four cases myself, and have seen the tumor shrink and the patient get well.

Dr. George Porter.—I do not doubt that many of the cases reported in the medical journals as cases of ectopic pregnancy are errors in diagnosis. Yet, not long ago, in the course of only thirteen months, four cases came under my observation in which I opened the abdomen, and in three found and removed the fetus, and in the other found rupture, which was about as good evidence of ectopic pregnancy as if the fetus itself had been found. I have operated in other cases in which the condition of the tube gave evidence of there having been tubal

pregnancy.

WHAT CONDITIONS OF THE UTERUS RENDER HYSTERECTOMY NECESSARY OR DESIRABLE WHEN THE APPENDAGES ARE REMOVED?

THE PRESIDENT said this subject had been selected for general discussion because of the difference of opinion which it had elicited during some remarks before the New York Obstetrical Society. One gentleman had expressed the belief on that

occasion that whenever the tubes and ovaries are removed for disease the uterus should be removed also. Other speakers took the ground that only under certain conditions should the

uterus also be removed.

DR. H. T. HANKS.—There is one class of cases in which I believe that the uterus should also be removed when the appendages are removed. I refer to the septic condition following abortion or labor, when you are morally sure that there is pyosalpinx and at the same time sepsis in the uterus. There, upon opening the abdomen and removing the diseased appendages, you should also take away the uterus. Such a case came under my observation, in which I found both tubes matted down, filled with pus, one ovary containing an abscess, the uterus twice the normal size, which pointed clearly to its septic condition. I removed both the appendages and the uterus, and no untoward results followed. The after-examination of the uterus showed that its removal was justifiable, for it contained several foci of pus, the veins contained pus, and at one point where there were remains of decidna the uterus had begun to take on malignant change, and this had probably been the cause of the abortion, instead of trauma which had been the suspected cause. If, therefore, I had known the whole condition of the uterus before operating, I would have been still more strongly impressed with the necessity for its removal.

I am also very much inclined to believe that in old and bad cases of chronic endometritis, the tubes and ovaries also being useless, it may be a wise thing to remove all. Of course we must be guided also by the patient's ability to withstand the operation. If she is able to bear out the fifteen minutes' longer time required for the removal of the uterus where the tubes and ovaries are being extirpated, I am inclined to believe that we are justified in also removing the uterus when it is the

seat of chronic and acute endometritis.

Being asked whether he meant complete removal of the uterus or supravaginal amputation, Dr. Hanks said he meant complete removal; or he might perhaps leave a trifle of the cervix, as he did in the case related, in order not to be obliged to close

the vagina.

DR. A. F. CURRIER.—It seems to me that the same rule should guide us which governs the general surgeon in operating upon other portions of the body. The general surgeon removes no portion of the hand which he can by any possible means save. That is the ideal rule, and should, I think, be applied by every conscientious man to all portions of the body. It is not a sufficient excuse to remove a part to say that in certain cases it has become the seat of fatal disease. We have no right to assume that a part will be the source of trouble in the future when it is healthy to-day. What we have to deal with is the present condition. If there should be malignant disease of the

uterus, or strong suspicions of it, or a septic condition accompanying the puerperal state, or certain other diseased conditions, the indications for its removal become clear.

Dr. F. P. Chambers.—I think the principle of conservatism should be especially applied with regard to the removal of the ovaries. No doubt all will agree that these organs have often been removed where there was no necessity for it; but if we conclude that in a given case they should be sacrificed, I think the uterus should also be removed if it is the seat of disease, such as foreign growths, endometritis, and certain other conditions. But if the organ is perfectly healthy and normal or sub-

normal in size, I think it certainly ought to be left.

Dr. A. P. Dudley.—It seems to me that, in order to discuss this subject intelligently, we ought to divide it into two parts: 1, what conditions of the uterus render hysterectomy necessary; 2, what conditions of the uterus render its removal desirable when the appendages are removed. I will reverse the order and first ask, What do we remove the appendages for? For the different forms of cyst-ovarian, parovarian, and dermoid; for hematocele, for hydrosalpinx and pyosalpinx, and for extrauterine gestation. Not one of these necessitates the removal of the uterus in order to relieve the patient, except perhaps in certain conditions. What conditions of the uterus render hysterectomy necessary? Fibroid tumor with hemorrhage, cancer, rupture, in some cases the puerperal condition if we get it in the early stage, hydatids, sepsis with local deposits of pus in the uterus. To my mind these seem to be the conditions calling for discussion on this occasion. It will be seen that usually the indications for the removal of the uterus are independent of those calling for removal of the appendages. The chief exception is in the case of sepsis, where there is not only pyosalpinx or suppurating ovaries, but also local deposits of pus in the uterus. When, however, the uterus can be saved with safety to the patient, I think it should be allowed to remain, for it is quite possible that it has some function to perform even when the ovaries and tubes have been taken out. We find in our practice women who have a uterus but no tubes or ovaries, and others who have tubes and ovaries but no uterus, yet they are well. I do not believe in depriving a woman of anything which she has, if we can prevent it. A few months ago Dr. Polk read a paper in which he stated that he could cure ninetynine cases out of a hundred of pyosalpinx by curetting the uterus, packing with gauze, and draining. Four months afterward he read a paper in which he advocated removal of the uterus entire for pyosalpinx. Where is the middle ground between the two papers? That is what I want to find. Now, endometritis is a condition which our good teacher here, Dr. Emmet, says seldom exists. There are one or two forms which he acknowledges do occur. There is septic endometritis, for

instance. If there you remove the tubes and ovaries, and cut off the means of travel in that direction, it rests with your judgment whether poison in the uterus is likely to be taken up by

the lymphatics and kill the patient.

Some query, "If the tubes and ovaries are taken out, why not also remove the uterns? It is a useless organ." Many men are paralyzed: would you cut their legs off because they are useless? There are gynecologists who go away beyond the swing of the pendulum. It is not within the bounds of reason to advocate the removal of the uterus simply because there is disease or absence of the appendages. There are comparatively few conditions of the uterus which require hysterectomy at the time of removal of the tubes and ovaries. They may be mentioned as follows: fibroid tumor, rupture, cancer, local foci of pus within the uterus resulting from sepsis. If the claim which has been made is true, that ninety-nine cases of puerperal sepsis out of a hundred can be cured by washing out the uterus and packing with gauze, or with these and curettage, why not resort to this treatment instead of subjecting the patient to the shock of abdominal section and the mutilation of the pelvic vault?

I wish, then, to be put on record as favoring hysterectomy, in conjunction with removal of the tubes and ovaries, only in such

diseased conditions as I have mentioned.

Dr. James R. Goffe.—The method of treatment consisting in dilating the uterus, curetting, and packing with gauze was instituted and was found to work admirably in just that small proportion of cases which was not cured by the primary operation for the removal of the diseased appendages. Recognizing the fact that disease of the appendages has, in the great majority of cases, its origin in the interior of the uterus, it seems to me perfectly rational to attack the original seat of the disease while removing the organs which had subsequently become affected. Therefore it is my practice, and I know it is the practice of many operators, to dilate and pack the uterus with iodoform gauze before opening the abdomen for the removal of the appendages. I believe that is correct treatment, and that if it were more generally adopted it would usually obviate the necessity for removal of the uterus where we open the abdomen to remove the appendages. Yet I believe there is a limited field where hysterectomy is indicated, but, according to my observation, it is only in two classes of cases-where there is sufficient disease of the appendages to demand their removal and there is also a suspicion of malignant disease in the uterus, and where the appendages are so adherent to the uterine walls that to attempt to separate them would prolong the operation and render it more dangerous than to do hysterectomy. Of course the uterus should also be removed in cases in which it is the seat of fibroids.

Dr. A. H. Buckmaster.—I believe, in the main, in the indications which Dr. Dudley has specified for removal of the uterus at the time of extirpating the appendages, but there is one more indication which I regard as an important one in certain cases, namely, free drainage of the pelvis. It is true that direct drainage may be obtained by opening into the vagina behind the uterus, but I believe there is no way by which such efficient drainage can be secured as by removal of the uterus itself, particularly

where an abscess has opened up the connective tissue.

I do not agree with Dr. Dudley and some other gentlemen who think that the cervix is of any use in maintaining the integrity of the pelvic floor as a means of support. I am quite sure that the pelvic floor deprived of the cervix is just as efficient as a supporting structure as it is with it. The experience of Dr. Krug has influenced me very much in my views upon this subject. He found that where he removed the tubes and ovaries for diseases of various kinds many of the patients came back to him complaining of certain symptoms; but where the entire uterus was also removed, as in cases of fibroids, the patients scarcely ever complained of symptoms subsequently.

The point which I wish especially to emphasize is the great advantage gained by thorough drainage in certain cases by re-

moval of the uterus.

Dr. Bache McE. Emmet.—Last February I removed the appendages on both sides in a case of cystic degeneration of the ovaries, the tubes themselves showing no disease. Microscopic examination, however, showed that there was a small amount of papillomatous disease beneath the tube which had not been revealed by any mass. Following the operation the woman's health improved strikingly, but in December she returned and gave a history of having failed rapidly the past six weeks. Examination gave evidence of disease on the left side, the papillomatous change having been on the right side, and when I came to remove the uterus, which was done in the presence of Dr. T. A. Emmet, the entire cellular tissue on the left side was found invaded, while on the right side there was disease of the horn only of the area of a split almond. The patient died within five hours of shock.

Alluding to another class of cases, I recall one in which I believe Dr. Dudley first operated, removing some organ; Dr. Tull operated afterward, removing another organ; and this fall I operated upon the patient, and she will still have to undergo another operation. She was suffering much from pain when she came to me, and on opening the abdomen I found that some of the tube had been left on one side and that some prominent erectile tissue had evidently been the seat of the pain. After removing this the patient's pain left her entirely, but it has since returned, and I believe now that there is disease which has extended gradually in the inverse direction—that is, from the

tube to the uterus—and that the remnant of the uterine end of the tube has been the cause of the subsequent trouble and will necessitate a further operation; there is, at any rate, a slight enlargement of the horn to be felt on the right side. If in removing the appendages we do not go to the extent of also doing hysterectomy, I think we may well follow the suggestion of Dr. Polk and excavate down into the horn, and in that way prevent, if possible, extension of tubal disease into the uterine canal. We can burn out the centre of the tubal entrance, and even turn in the peritoneum, making any remaining disease

which may possibly be present extraperitoneal.

Dr. Thomas Addis Emmer.—I had not intended to say anything upon this subject, but was curious to know what might be said upon it. It seems to me it can all be summed up in a few words: when the operator removes the appendages, he must use his own judgment and remove the uterus if there is anything special calling for it. To make an iron-clad rule that the uterus must be removed because the appendages are taken out, to me would seem absurd, unless I was thoroughly convinced that the Almighty had made a mistake in giving woman a uterus. If the uterus is sound I cannot for a moment entertain the idea that it must be taken out. The operator must, of course, use his own judgment in every case; if he finds malignant disease of the uterus, or any other special indication, he must remove it. So-called endometritis does not require removal of the uterus. The appendages being removed where their removal is indicated, Nature will take care of that so-called disease.

Dr. Ingalls.—Some stress has been laid upon the question of pain after removal of the appendages, and it has been claimed that it is due to having left the uterus. Now, I believe that in some cases this pain is located in the stump. It may be due to the manner in which the ligature has been placed on the stump. It seems to be analogous in some instances to the pain felt in

the stump after amputation of a limb.

It seems to me the uterus should not be removed unless it shows evidence of disease. I would not admit to the operative cases those in which there is simply some endometritis or enlargement. But if there was such disease of the uterus as we know from experience is likely to give rise to future trouble, then there is an indication for its removal at the time of removing

the appendages.

Dr. CLEMENT CLEVELAND.—I cannot believe that Drs. Krug and Polk, the chief exponents of this new plan of operating, would be quite so extreme in their position as at first appeared. I believe, though, that the discussion of the subject has done good; that it has called attention to the fact that in a great many cases where we have removed the appendages we would have done well to go further and remove the uterus as well. But where the uterus is small and evidently not inflamed or diseased

in any way, I certainly cannot see any reason for continuing the operation further than the removal of the appendages.

Dr. Porter.—It seems to me that in a large proportion of the cases in which pain occurs after removal of the appendages, its seat is not in the uterus at all, but in other tissues, especially such as may have become adherent to the raw surfaces of the stump. If that be true, of course the number of cases in which hysterectomy is indicated in addition to removal of the appendages is still further reduced.

Dr. Dudley.—The position which I have taken would seem to call for a few more words of explanation. I assume that I am talking to experts, and not to men who cannot make a diagnosis. There are two conditions which I would add to those which I before mentioned as indicating hysterectomy. They are extensive adhesions which cannot be broken up with safety, and tubercular disease, referred to by Dr. Cleveland. In my mind it is quite unnecessary to remove the uterus to get drainage through the vagina. There is plenty of room behind it for any amount of drainage which may be required. I believe that many of the hysterectomies which are performed in connection with operations for tubo-ovarian disease are the result of following a fashion or of having announced an operation for removal of the uterus in a case where the patient had been seen only for the first or second time.

THE PRESIDENT.—This subject interested me very much when it was brought before the Obstetrical Society sometime ago and the statement was made that the uterus should be removed in all cases where the tubes and ovaries are removed. It made me feel that I had been born a great while ago, for, although I had once been considered radical myself, yet I had never accepted such radical views as this implied. I take in this matter very much the same ground which Dr. Emmet stands on-namely, that the operator must judge in each case whether removal of the uterus is called for or not. To lay down fast rules for application in all cases is wrong. There is no doubt but that our surgical success the last five years has tended to make us rather dictatorial and absolute; too much inclined to form fixed opinions upon a comparatively limited number of cases, or rather upon an experience which has extended over too short a time to determine many of the intricate questions which arise.

The age of the patient has an important bearing upon the extent of the operation. For instance, if I was removing the tubes and ovaries for disease in a woman 30 years of age, I would be much less likely to take out the uterus as well than if she were 40 years of age. Indeed, I would go further and say that age is such an important factor in the after-results that I would be very willing, with slight indications, to remove the uterus in a woman 40 years of age or more, especially if the condition calling for removal of the appendages was one of long-standing and obstinate nature—for instance, cases in which the uterus may have been lacerated and become indurated, this condition having been present a long time; for, without doubt, such conditions render cancer much more likely to occur than if they were not present. I would also hesitate to remove the tubes and ovaries in a young woman, when I might not if she were 40 years of age. I know that after their removal in young women the remaining genitalia atrophy-not the uterus alone, but also the vagina, the vulva, and parts which may be of a good deal of practical use, especially in women who are married to healthy men. Following removal of the appendages atrophy goes on; the mucous membrane becomes smooth, loses its tone, contracts; intercourse becomes practically impossible without mechanical preparation. I would object to removing the uterus except for good cause, especially in young women, on account of possible ill results which our too recent experience with the operation may not yet have determined.

ENTEROSTOMY IN OBSTRUCTION FROM CANCER.

Dr. A. Palmer Dudley, in presenting specimens, said: I have here the liver and part of the intestine removed post mortem some weeks after operation, the operation (intestinal anastomosis) having been done for obstruction due to cancer. Five inches of the descending colon were removed for the obstruction.

A practical question in the case is, How much benefit do we give a woman by an operation which relieves her of acute intestinal obstruction, but permits her to suffer and die of unknown cancer of another organ after about forty-five days? This patient was operated upon March 24th, 1893, and died May 12th. She was 43 years of age, the mother of five children, had never had a miscarriage, had been operated upon for laceration of the cervix and perineum. She had suffered, during the six months before her acute attack of obstruction, from repeated attacks of alternating diarrhea and constipation. I saw her the day before this operation was made. There was no difficulty in locating the site of the intestinal obstruction. The acute attack had existed eight days when the operation was performed. made abdominal section, brought the obstruction readily into view, saw at once that it was a case of complete intestinal obstruction from thickening of the walls of the gut, as shown in the specimen presented. Before the operation had been undertaken the temperature had begun to rise, stercoraceous vomiting had set in. The patient's nervous system was in a high state of excitement. In proceeding with the operation an elastic ligature was first thrown around the lower segment of gut, passing through an incision in the meso-colon, then another ligature was passed above the obstruction in a similar manner so as to prevent the passage of fecal matter. The two ligatures were connected at the meso-colon by a cross-ligature so as to prevent hemorrhage from the meso-colon. I then cut into the bowel, washed it out with bichloride solution, having a clear intestine after that to work upon. I then cut squarely across the intestine, which left five inches space on the meso-colon which first required treatment. This being done and the two ends of the gut being brought together, they were united by three rows of sutures. With fine silk and a cambric needle I started at the meso-colon to sew together the two ends of the divided mucous membrane, running a continuous stitch, including only mucous membrane, around the gut until the point was reached whence I started. I then proceeded to treat the muscular coat in the same way, and finally the peritoneal coat, the only difference in the sutures being that while uniting the peritoneal coat it was rolled in slightly, or about an eighth of an inch. The two ligatures were then removed, and gases and fecal matter passed through the bowel. There was a little oozing from one point on the upper surface of the gut, which ceased after the insertion of two or three sutures. I then dropped the gut back and examined all the organs in the abdominal cavity. The liver was of natural size; the spleen was also of natural size; the kidneys were in normal position; the uterus was verv small and slightly adherent, due, doubtless, to a little inflammation lit up by an operation on the cervix some time before. The abdomen was washed out with hot water and closed. In four hours' time the woman had five movements through the natural channel. The temperature did not rise as high as 100° F. Seven or eight days after the operation we noticed a little oozing of a clear, colorless serum from the lower end of the abdominal wound. It was supposed to be due to having cut off the entire hemorrhoidal circulation from the lower end of the intestine back to the liver, the serum being the result of consequent osmosis.

The patient did well for weeks and then began to show rapid enlargement in the region of the liver. A well-known professor of internal medicine in the city was called in consultation, who made a diagnosis of enlarged omentum. I was not quite willing to agree with him, but still was willing to await the result. On the 12th of May the patient died of exhaustion. The post-mortem examination, a report of which accompanies these remarks, proved the case to have been one of primary cancer of the cecum with secondary metastasis to the liver.

The liver was very much enlarged in its several diameters and contained cancerous nodules. The growth in the sigmoid flexure extended an inch and a half in the long axis of the gut, including the whole of the intestine for this distance except an aperture of one-eighth of an inch in diameter. At the narrowest portion of the constriction it was three-fourths of an inch in thickness. From the mucous surface to the serous coat the

surface was slightly ulcerated, irregular in contour, and quite

hard.

The intestine at the point of suturing, viewed externally and opposite to its attachment to the mesentery, showed good union for the distance of about two inches. The remaining portion of the incision was open and the stitches loose, this having probably been produced at the post-mortem. The uterus behind and near the fundus, and a portion of the left Fallopian tube, were adherent to the healed surface by slight but firm fibrous bands. At that portion of the incision which had not united there was a necrotic area running parallel to the incision for several inches and extending a distance of one-eighth of fan inch in the direction of the axis of the gut. The portio uteri had been amputated and the stump was hard and rasp-like. Microscopical examination of tissue taken from this

part showed no evidence of carcinoma.

Commenting further upon the case, Dr. Dudley said: I repeat the question, Was it worth while, in the light of the after history of this case, to perform the operation? Probably most surgeons would say yes. But what did we gain? Only time for the woman to make her will and to settle a few minor things in her domestic life. I have seen several cases, two since this one, in which I refused to remove cancer occluding the bowel. It is a topic which is being discussed very much at the present time. Dr. Murphy read a very good paper, two or three weeks ago, relating to this and kindred subjects, and in which he advocated the use of his button in all cases of occlusion of the bowel and of the gall bladder where it was desirable to establish communication between this and the intestine. After the discussion upon his paper I put the question to Dr. Murphy: Could you, in a case of occlusion of the colon like the one here related, use the button with any prospect of success and of escape of the button? And he was obliged to answer no. He could not use the button in complete occlusion of the large intestine. He could use it in uniting the small intestine with the large one. It seems to me, therefore, that end-to-end union of the intestine in complete occlusion of that canal is by no means a bad procedure, and I think Dr. Cleveland will bear me out in this opinion with a case of his own. Any man who makes abdominal section for any form of intestinal obstruction is liable to meet with such a condition as I found in this case, and he will hardly be able to devise a means offering better prospects of success than end-to-end union of the resected bowel. This method has certain advantages over side-to-side In the latter it is necessary to close the ends of the divided gut and reopen the gut along its lumen. This side opening has to be a long one, in order to obviate undue contraction and permit of free passage of the contents of the bowel. Dr. Murphy was obliged to admit that some contraction had

taken place even after his mode of procedure.

Before concluding I would say that in my opinion catgut ought not to be used in uniting the ends of the gut; the power of absorption in the intestinal canal is too strong. But with silk as suture material I believe one can operate by end-to-end union with as great prospect of success as with the use of any form of button which has to be discharged through the canal.

Officers.—At the executive meeting Dr. William E. Moseley was elected *President*; Dr. G. W. Porter, *Vice-President*; and Dr. E. L. H. McGinnis, *Secretary and Treasurer*.

TRANSACTIONS OF THE NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, December 28th, 1893. H. J. Boldt, M.D., Chairman.

ABSENT MENSES.

Dr. H. W. MITCHELL gave the further history of the case of non-menstruation which he had presented in February, 1892. The subject, an Irish girl, now 26 years of age, had shown at no time evidence of normal or vicarious menstruation, and the only event of further interest in her history was the fact that she had bled profusely when she had a molar removed about a year ago. Dr. Mitchell did not think this was connected in any way with absent menstruation, and there had been no further indications of hemorrhagic diathesis.

LIGATURE OF OVARIAN PEDICLE THE NIDUS OF VESICAL CALCULI.

Dr. Locke presented a silk ligature which had been the cause of the formation of vesical calculi. Some months ago the patient had been operated upon for sloughing ovarian tumor, but after the tumor had been removed bladder irritation, which had existed previously, continued. She passed several calculi, and then the ligature, which had sloughed through the walls of the bladder.

THE CHAIRMAN stated that the case sustained the position which he had long taken, that silk ligatures should not be used on the pedicles of abdominal tumors.

REPORT OF CASES OF ACCOUCHEMENT FORCÉ.

Dr. S. Marx read a paper with this title. He referred to a case which he had previously reported, in which he had performed Dührssen's incisions and had stated that this operation should be resorted to only in rare conditions. Elective accouchement forcé, which Dr. Grandin had revived and prominently brought forward, would answer every demand except in rare cases. By this means the operator could select a time most convenient for him and his patient. When using the catheter to provoke labor there was uncertainty as to the results, but with this method there would be no uncertainty; no foreign body which might induce sepsis would have to be introduced or left in the uterine cavity; there was no endangering the membranes; the best of all instruments, the hand alone, was used for bringing on labor.

There were two stages to operation—the preparatory and the active. The first stage, whenever time permitted, consisted of carefully introducing a tamponade of gauze into the cervix. care being taken not to injure the membranes, and then one against the cervix. This alone would sometimes bring on uterine action and enable the woman to deliver herself. If this did not take place, after ten or fifteen hours the tampon was removed and the fingers were used to produce dilatation, one after the other being introduced until the whole hand could be inserted, and then the operator could proceed in the way best suited to

the case.

Dr. Marx related five cases where he had used accouchement

forcé for placenta previa, eclampsia, and uterine inertia.

The first was a case of placenta previa with active hemorrhage. He gradually introduced the fingers, turned the child, and removed it. The placenta completely detached itself and was expelled. The cervix, however, was lacerated, which, he stated, ought not to have happened, but it was immediately repaired. In two of the cases there was time for preliminary tampon, and in one of these its use alone brought on uterine action and the woman delivered herself of the child, which was dead.

Dr. Egbert H. Grandin was called upon to open the discussion. The cases cited showed that the operation was a very safe one to the woman, and a life-saving one to the child, and they were in accord with his own experience. Therefore he was still practising this method when necessary, and expected to continue to do so until some better method could be offered. The objections could be reduced to one—the danger of rupturing the cervix. Version and forceps might also rupture the cervix, but we were not going to reject them on account of such a possibility, nor would we reject accouchement force for no better reason. Dr. Marx and he could cite between them

fourteen cases or more in which accouchement force had been used, and all the mothers and all but two of the children had lived. The two children who did not live were non-viable. The probabilities were that by any other method the children would have all been lost. While there was possibility of rupturing the cervix, there was no necessity for it, for there was no brute force used in dilating the cervix and lower uterine segment with the fingers. If, however, the cervix should rupture, there was nothing simpler, as the author had said, than to repair it immediately after labor, if the patient were placed upon her back.

Dr. Malcolm McLean thought cases should not be classed among the successful ones of accouchement forcé when nothing more had been done than introduce a tampon into the cervix and vagina preparatory to acconchement forcé, and which itself brought on successful labor. For his own part he would prefer to the gauze tampon the use of hydrostatic pressure by the improved Barnes dilator. While he had been more favorably impressed by the method of acconchement forcé as described by the author and Dr. Grandin this evening, and believed it might be called for in some cases, still he felt that it was really attended by some danger, especially that of rupture of the cervix into the vagina, should it come to be employed by those less experienced. Dr. McLean also took occasion to express the opinion that where rupture of the uterus had been attributed to version it had in reality been due, in the majority of cases at least, to earlier unsuccessful and unskilled efforts at extraction with the forceps.

Dr. J. CLIFTON EDGAR said his views were very nearly in accord with those of Dr. Marx and Dr. Grandin, but he felt that in many instances delivery would have to be effected more hastily than it was safe to do by acconchement forcé or dilatation with the hands, and in those cases he would conjoin incisions of the cervix with manual dilatation. He had had occasion to resort to the combined method in one instance. In another case, in which he was about to resort to symphysiotomy, he preceded it by acconchement forcé instead of by hydrostatic dilatation,

thereby saving time.

Dr. Robert A. Murray was opposed to cutting the cervix wherever it could be avoided. Dilatation could always be effected without it, if time permitted. If the cervix were anyways hard, dilatation with the hand was very tiresome and required intervals of rest, either an assistant taking the principal's place or Barnes' dilators being introduced during the interval. There was increased danger of sepsis when an assistant was called upon. There was also danger of shock in rapid delivery. He related a case of hemorrhage which had gone on until the patient was about in collapse when he arrived, and, instead of proceeding to effect rapid delivery, time was taken for trans-

fusion and such steps as would avoid adding to the shock, else

the woman would certainly have perished.

Dr. Marx, in closing the discussion, insisted that there was no necessity, in accouchement force, of resorting to such brute force as would result in rupture of the uterus. He did not approve of Barnes' bags, which either were never at hand, or, if kept for immediate use, were rotten when the emergency finally did arise. As to accouchement force, or rapid delivery of any form, during shock, he thought no operator would add such a danger to the existing one, but would first try to revive the patient.

THE RADICAL CURE OF UMBILICAL HERNIA.

Dr. George M. Edebohls discussed this subject, making use of illustrations on the board, and presented a patient. Herniæ which occurred in the median line of the abdomen were divided, according to their cause, into four varieties: those due to fat, celiotomy, pregnancy and tumors, and umbilical. He proposed to consider only the last—umbilical. First, however, he pointed out certain differences between this form and the form following operations. The latter was more easily cured for the reason that the separation of the walls was elliptical and their edges were less retracted and attenuated. In umbilical hernia the edges of the opening were composed of thin, white, fibrous tissue.

In children a bandage or truss might answer, but in adults it was not to be used. It was difficult to fit, and should the hernia come out while it was being worn, injury would follow and there would be greater danger of its becoming irreducible. Every woman with an irreducible hernia was entitled to an operation. As long as the hernia was permitted to remain it was exposed to injury, to incarceration, to the skin becoming extremely thin and inflamed, to phlegmonous inflammation through repeated

attempts at reduction.

Dr. Edebohls then mentioned some reasons why operative procedures had failed, and went on to give the methods of operating which he had tried. The opening being a round one, it was necessary to render it elliptical, so that, if its diameter had been two inches, its length would, after trimming, be as much as six inches. He had tried the flap-splitting method, splitting the thin walls back half an inch anteriorly and posteriorly, so that when they were brought together they presented a broad surface of union; but the trouble was that when the sutures were tightened the very broad walls were narrowed almost to a line. What was wanted was a means of union which would leave the flaps broad when united, and this was what he had been enabled to accomplish by the suture which he had described in his operation for perineorrhaphy. During four years' use in perineorrhaphy it had always given primary union and a second opera-

tion had never been called for. While it had not given equal success in umbilical hernia, yet it had proven very satisfactory. He first brought the flaps together with catgut, and kept the line of union broad by inserting buried silkworm-gut sutures, about three to the inch, and these remained after the catgut had become absorbed.

HYSTERICAL MANIFESTATIONS DUE TO ALCOHOL.

Dr. Henry C. Coe read the paper. The etiology of hysteria or hysterical manifestations was not always clear, yet it could be detected by the observant physician in many cases where it was commonly quite overlooked and the treatment, in consequence, was entirely misdirected. That tippling was not uncommon among fashionable women was well known, but visible effects of it were seldom shown except in unusual vivacity. It was only after unwonted indulgence that the old hands displayed symptoms which might be mistaken for hysteria. It happened now and then, however, that young women of nervous type and unaccustomed to alcohol were for some reason led to take, for them, an excessive quantity, and developed hysterical symptoms for the first, and it might be for the last, time. Several cases had come under his observation, the first related being that of a young woman of high degree of intelligence, who had shown habitual self-control, had never manifested hysterical symptoms, yet one morning astonished her family by manifesting much excitement, laughing, crying, throwing off her clothes, and behaving in a rather extraordinary manner. He learned that she had been out the evening before and had partaken of a moderate amount of intoxicating drink. The second case was similar. A young miss partook of two or three glasses of wine at a dinner, and that evening developed hysterical symptoms, tearing off her gown and showing considerable excitement. There had been no previous attack, and none since. instances were also given of hysterical excitement developed in fashionable women who were accustomed to drink, but on this occasion had some hours previously taken more than their accustomed amount. One case was that of a woman who had developed the tippling habit from having been given alcohol by her physician for the relief of pain of menstruation.

Every case of hysteria to which one was called should lead him to inquire as to the patient's drinking habits. It was important to remember, too, that a small amount of alcohol was sufficient to upset the nervous system of a nervous woman who was not accustomed to stimulants. The physician was in a position to exert an influence in the right direction with regard to the tippling habit and the dangers attending it. The best remedy for the hysterical attack in such cases was to secure sleep and cause the excretory organs to act. Dover's powder would quiet the nervous system and stomach, make the patient sleep, and bring on perspiration, so that after again awaking she would be found in her right mind. The physician who prescribed whiskey or brandy for a slight ill was scarcely less culpable than he who gave opium for the same reason.

Dr. R. A. Murray would give an emetic first—of tepid water, if that would succeed.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, January 22d, 1894.

The President, SENECA D. POWELL, M.D., in the Chair.

THE OPIUM DISEASE IN CHILDREN.

Dr. Louis Fischer read a paper in which he gave the histories of several cases of opium disease or opium habit in babies or children which had been brought on by the custom of giving paregoric, soothing syrups, or other forms of opium, either for the purpose of quieting the child or for the relief of diarrhea or other gastro-intestinal trouble. Not infrequently the medicine was prescribed by a druggist, and its use was continued because of its stupefying or tranquillizing effect. Among the symptoms were diarrhea alternating with constipation; stupor; restlessness, especially when the drug was left off; diaphoresis; scanty urine of high color, perhaps containing albumin; emaciation; so-called marasmus, etc.

The paper was discussed by Drs. Crandall, Chapin, and others, all of whom agreed as to the frequency with which nurses and also mothers gave opiates to infants, and as to the

injurious influence of these.

PUERPERAL SEPSIS-ITS MODERN PROPHYLAXIS AND TREATMENT.

This was the title of a paper read by Dr. R. W. Murray. He had been led to prepare it by the fact that antiseptic midwifery, which had come to be generally practised in hospitals, was still much neglected in private practice. Confinement, he said, is a natural or physiological process, and if followed by fever or any septic manifestations it is due to some fault of the accoucheur's technique. In the vast majority of the cases the septic matter is conveyed to the parturient woman through the vagina and uterus by the examining finger or instruments. While there are various manifestations of the disease according to the structures involved, still the cause is almost universally the same—the introduction of some septic matter from without.

Prophylaxis was obtained by preventing the entrance of

germs, and this was secured by antisepsis before confinement. antisepsis after confinement, shutting off the genital tract after labor, and securing contraction of the uterus. He used the term antisepsis because it was only through antisepsis that asepsis could be secured. The prophylactic treatment which they advocated and employed at the Maternity and in private practice required little time, was not burdensome or expensive. The antiseptics which they had employed were corrosive sublimate, carbolic acid, and creolin, the latter being preferred by Dr. Murray because of its freedom from certain objections which pertained to the others. Before confinement the patient's clothes were changed; the external genitals were cleansed; she occupied a bed in a sunny, well-ventilated room; new sheets, and a rubber cloth two yards wide covered with a slip-sheet, were put on the bed. The bowels were moved by an enema; and in this connection the reader expressed the opinion that a good many cases of infection were due to the fact that the bowels had not been moved, feces were forced down during labor and infected the hands of the accoucheur, and through them the genital passages of the woman. A napkin was placed a little under the sacrum. The nurse was instructed not to make a vaginal examination before the arrival of the physician. The latter washed his hands, cleaned his nails, used a nail brush, immersed the hands in bichloride solution 1:2000, touched nothing until the vaginal examination had been made, if it was intended to make one. Creolin could be used to lubricate the The antiseptic pad was ready to apply immediately after extraction of the child, and was left on until the placenta came away, when another was applied. Expression was used in placental extraction. The hands were not introduced. If, however, any membranes remained they should be brought away at once. If the hand had been introduced into the uterus, or if the liquor amnii were foul, or other unusual occurrence had taken place, the intra-uterine douche should be employed, the uterus being held meanwhile in a state of contraction with the hand on the abdomen. With this exception no douche was given during the puerperium. The external parts were bathed with creolin and a pad was applied over the vulva; the patient was cleansed; clean sheets were placed beneath her. A dose of fluid extract of ergot was given after the labor, especially if there were any tendency to uterine relaxation. In hospital practice the urine was usually drawn with the catheter every eight

In evidence of the superiority of the antiseptic method in midwifery, Dr. Murray quoted the statistics at the Maternity Hospital for a period prior to the antiseptic method and subsequent thereto. The former showed a mortality from septic causes of 4.17 per cent, the first antiseptic period only about a quarter of one per cent, and the last, during which there had

been nine hundred and fifty-seven confinements, no deaths from sepsis. In the nine hundred and fifty-seven cases there had been one hundred and twenty-four operations; deaths from all causes, six. This excellent showing had been obtained in the face of the fact that the house staff and nurses were changed

about every six weeks.

Inspection should always precede vaginal or intra-uterine douche following labor, lest an infected clot or diphtheritic patch be carried up into the uterus. He believed puerperal diphtheria was more common than had been recognized. The source of any fetor should be determined; if from the uterus, it was apt to be from the corners, where shreds of placenta were liable to be retained. The uterus being cleansed thoroughly, it was packed with iodoform gauze. If acute general septic peritonitis had already developed, laparatomy would be useless; it was different if the peritonitis were local. A case of rapid fatal septicemia, death in twenty-four hours, was due to a nurse examining the patient before the physician arrived, the nurse having attended a case of diphtheria.

Dr. Egbert H. Grandin thought an aseptic confinement should be followed by a perfectly afebrile state. As soon, therefore, as there was rise of the temperature and acceleration of the pulse, the heart and lungs being excluded as a cause, the physician should seek at once to locate the origin of the trouble. According to his observation the majority of cases of puerperal sepsis originated in the uterine cavity. He was opposed to what seemed to be the routine practice of simply giving a uterine douche or douches in such cases. The proper procedure was to examine the interior of the uterus with the finger before giving the douche, in order to be assured whether the source of sepsis was within that organ. If it was, then the more radical the treatment the better. The douche would not eradicate sepsis beginning and emanating from the uterus; it was necessary to make thorough dilatation, curettement, and efficient drainage. A second point which he wished to make was that laparatomy should be performed for septic puerperal peritonitis, whether it was local or supposed to be general; for, while it would in all probability prove fatal in spite of operation if it were general, we could not be positive in our diagnosis, and might find but a local collection of pus, on opening the abdomen, where we had expected general distribution. Acting on this principle, he had saved two lives the past three years which would have been lost had no operation been performed.

Dr. H. J. Garrigues said it was just ten years ago that he had read his first paper on the prevention of puerperal infection. Those who listened to it could have been divided into two classes—viz., those who believed puerperal disease hardly existed, and those who admitted its frequency but believed that

the better results obtained by Dr. Garrigues' method would be found, as on other occasions, due to some other factor than the method itself. Many took a humorous view of the measures then advocated. Now, however, it had come to be generally admitted that the proper treatment and prophylaxis consisted in antiseptic midwifery. While this had come to be generally adopted in hospitals, we could not say as much for private practice. It was common for physicians to say that the patient could get along without all these precautions. Statistics, however, told a different story. How often did we hear of young women in the walks of society dying in their first childbirth! This meant infection, and infection could be prevented. The doctor should not make a vaginal examination without taking the same precautions that he would if he were going to perform a laparatomy. He should not enter the uterus at all before labor; all that was necessary was to feel the dilating os. He had been surprised to hear that it was the custom in the hospital to draw the urine with the catheter every eight hours after labor. Better let the woman urinate naturally, if she could. He agreed with Dr. Grandin regarding cleansing the uterus in sepsis, and in opening the abdomen in septic peritonitis, both general and local, for that supposed to be general might be only local and amenable to treatment by laparatomy.

Dr. Rosenberg did not believe that puerperal sepsis would be eliminated until midwifery was placed altogether in the hands of physicians or educated midwives. An important lesson was taught by the fact that puerperal sepsis was scarcely known in certain localities where a vaginal examination was never made. One should use no antiseptic which would mask fetid lochia.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI.

Meeting of October 12th, 1893. The President, William H. Taylor, M.D., in the Chair.

Dr. A. W. Johnstone made some remarks on the

CONTINUANCE OF MENSTRUATION AFTER OÖPHORECTOMY.

Oöphorectomy now gives us no more anxiety, under favorable circumstances, than an ordinary plastic operation; but occasionally we fail to bring about the menopause, and the time has come when we ought to find out why. I have failed twice in some two hundred and fifty cases. In one case a woman of 30 had a chronic appendicitis, and had had pelvic mischief throughout all her menstrual life. I removed the left tube and ovary. On

the right I found the tube so adherent that it would have taken me fifteen minutes to unravel it. The patient could not stand the anesthetic, became pulseless, and I had to quit and sew up. She got along pretty well for about a year, when some inflammatory symptoms again appeared. At a second laparatomy I removed what I supposed was the whole of the ovary, but was not sure, however, that I had the tube, and so took out the uterus. She missed the menstrual period, but afterward began to have trouble again. I then made the third laparatomy and found there was a little piece of the ovary left. I am sorry to say the woman died after this third laparatomy. The tube was left behind.

There was one other case in which I was very much troubled, where I operated to bring on the menopause. For four or five months after the operation she had no menstruation, and then it returned and the tumor seemed to be refilled. I made up my mind to do a hysterectomy; but she worried along and did not make up her mind for a year or eighteen months, and she then wrote me that the menstruation disappeared. Her friends said she was fat and apparently well. I have now lost track of her for about two years. A case in which I am much interested is one which proves that these failures are due to our not thoroughly removing the broad ligament. A member of this Society operated ten months ago and the patient continued to menstruate. She came to me in the spring and I curetted her, but this had no effect except to improve her general health. Her stomach was in a very bad condition and there were serious bilious attacks. In July or August I sent her to the country, and she came back about the middle of September. I then found a lump in the uterus. Upon operation I found a piece of the tube left. I placed the ligatures underneath the horn of the uterus and took out the tube. She was due to menstruate last Saturday (it is now two weeks since the operation), but she has no signs of it, and she has been eating very well. All the subjective signs of the menopause are now showing themselves. The great improvement in the stomachic symptoms makes me hope the case will be a success. No such disease is cured until the menopause is brought on; we must stop the monthly trouble, which causes disorder in the nervous system. In Cincinnati I suppose we are doing more laparatomies than in New York and the towns on the harbor there—I suppose they are about second—and if we get down to work and carefully consider our cases we will have even greater success than we now have. I hope at some future time we may have this discussed as a special subject. It is my belief that we fail because we do not thoroughly destroy the nerve plexuses about the ovary.

Dr. C. A. L. Reed said: I have been impressed with what the essayist has said, as I am always pleasantly impressed by his productions. However, there are some things Dr. Johnstone has stated upon his feet which, if he had been committing his language to paper, I think he probably would have modified. For instance, the doctor has stated that we operate to produce the menopause, and not to get rid of diseased tissue. I really think our practice is undertaken for the purpose of removing manifestly diseased organs, that we may, secondarily, cause the menopause. I think the question that has been fought over in this field of surgery more than any other is the one which involved the principle enunciated by Battey as against the principle enunciated by Mr. Tait. Battey operated primarily to produce the menopause; Tait, to remove diseased organs. In the controversy which has waged since then, I think the latter ground has proved to be the more tenable, and I think Dr. Johnstone in his practice is one of the chief exemplars of Mr.

Tait's practice.

Now, I am aware of the fact that for a number of years, particularly since the researches of Dr. Johnstone, we have been looking to the broad ligament as the seat of the plexus which essentially governs the trophic changes in the endometrium, governing and producing and, indeed, constituting the men-With this idea in view I have endeavored to extirpate as much of the broad ligament as I could conveniently. Week before last, while operating in the practice of my friend Dr. Wright, of Indiana, I reapplied the ligature twice on the right side simply for the purpose of securing the removal of a larger amount of the broad ligament than I could with my first application. Another thing we should aim at is the complete extirpation of the tube, for in many cases we have a continuance of the function in consequence of leaving behind too long a stump. The persistence of menstruation after operation, particularly when it is associated with pain, is certainly one of the most distressing sequelæ which the operator can encounter, and one which will probably cause him the most chagrin. I recall a ease I operated upon five years ago in this city, removing pus tubes as large as I have ever seen, and the ovaries as well. ablation was complete on both sides, as was determined by careful inspection of the specimens after operation. In this case, operated upon under most unfavorable surroundings, I had to keep up drainage a considerable time. It left sinuses which I had to deal with secondarily, and in that case there was a persistence of menstruation which lasted between two and three years. At the expiration of the first two years I induced the woman to submit to a curetting, and I removed a quantity of granular tissue, but in about a month it returned. During each menstruation the sinuses would reopen, showing the same elaboration of tissue which takes place in the endometrium. Of course we recognize the histological difference of the membranes, the one being epithelial and the other principally connective tissue in origin and type. I concur with the essayist that the one thing

we have now to look after is the refinement of our technique. This refinement must come by the recognition of such principles as he himself has been elaborating in times gone by and to which he has addressed himself again this evening. I am exceedingly anxious to know the outcome of the case the doctor has made a preliminary report of to-night. It certainly will add great weight in determining the question of the function exercised by the broad ligament, and I am very hopeful that the weight of this testimony will be on the affirmative side.

Dr. C. D. Palmer said: My attention was particularly drawn to this subject a few months prior to my accident some five years ago. I saw a case in consultation, and made the oöphorectomy for persistent pain, menstrual disorders, and the detection by bimanual examination of an enlargement of the organs. The operation was made at the Cincinnati Hospital, and I consumed more than an hour in trying to enucleate the ovary. I thought I would never get the ovary out with its surroundings; but I finally succeeded, apparently, yet menstruation recurred and repeated itself every month during the remainder of the fall and winter. I have wondered why she had a continuance of menstruation, and I have been under the impression that I must have left some of the ovarian stroma in the folds of the broad ligament. I do not ascribe much influence to the law of periodicity or the force of habit. I am pretty well satisfied there was not a third ovary. I am disposed to think the continuation of menstruation in these cases is not so much owing to the fact that the ovarian plexus of nerves is not taken out or ligated, as that the needle is not inserted deep enough and the main branches of the ovarian artery are not ligated. A Battey operation is for the extirpation of the ovary, to bring on the menopause; a Hegar operation, to take out the ovaries for disease; and a Tait's operation, to take out diseased tissue of ovaries and tubes. Now, why is a Tait's operation more apt to cause a menstrual suppression than a Battey operation? Because the needle is placed deeper and the ligature cuts off all the blood supply from the ovarian artery to the broad ligament and the upper part of the uterus. Some cases of the continuation of a seeming menstruation following these operations can be accounted for on the ground that it is a metrorrhagia. explained by the fact that the sanguineous flow is suspended in some of these cases when the endometrium is curetted. Dr. Reed has mentioned a case. I think his case of the continuation of a bloody flow, seemingly menstrual, from that sinus proves conclusively what has been understood for many years that menstruation is not a local physiological change, but a systemic condition. When the uterus cannot perform the function some other organ will.

Dr. Stark said: Eighteen months ago I entertained the principle enunciated by Dr. Johnstone, that the cessation of

rectomy.

menstruation was brought about by the ablation of the nerve plexus, but at that time I met with two eases which led me to believe that possibly there were other influences at play. In the first ease I removed a double hydrosalpinx. On the right side the tube and ovary were readily removed; on the left, however, I had great difficulty in separating the adhesions, and there was a great deal of peritoneal oozing. On subsequent examination I found I had removed only the tube. At the time, on account of the continuous oozing and bad condition of the patient, I was obliged to tampon the pelvie cavity very tightly and put in a great quantity of gauze. She has been menstruating quite regularly since, and so I feel in this instance the presence of the ovary has had something to do with her menstruation. In the other case I removed the tubes and ovaries for the purpose of limiting the growth of a large fibroid tumor, and also on account of menorrhagia. Unfortunately the operation was fruitless. The tumor seemingly became smaller for a time, but after about five months it grew very rapidly. I then removed it, and she has since been doing well. I could find no evidence of tube or ovary. Perhaps this is one of the cases where the diseased condition of the uterus has contributed toward keeping up the menstrual flow.

Dr. George Jones said: Out of quite a number of oophorectomies I call to mind two which have given me real trouble. I placed my ligatures close to the uterus and took in a large amount of the broad ligament, and am sure I took in all the vessels necessary. One of these cases has menstruated regularly every twenty-six days, the other twice a month. They have all the symptoms that belong to menstruction. But there is something else to be done besides merely looking for the vessels that have been tied, etc. A microscopical examination of the uterine mueosa should be made from time to time, and I think you will find there will not be a similarity of structure from one three months to another. During the last year, in St. Mary's Hospital, we have had not less than seven cases that have been operated upon by parties outside of the city, and in all those cases there was some destruction going on in the interior of the uterus. In three cases curetting was all that was necessary; the others will almost undoubtedly end in a hyste-

Dr. Bonnifield.—I have never seen any of these cases operated upon a second time, but I have in mind a case over the river, which I believe was my first oöphorectomy, and so I cannot say I took out all the tubes and as much of the broad ligament as the doctors would have us; but I have the specimens in my possession, and they seem to show about the usual amount of tissue. She did not menstruate for perhaps six months, but since then has had a bloody flow about once in three or four months. At times she has a considerable flow.

Dr. Johnstone, in closing, said: I thank the gentlemen for the free discussion elicited. It is a subject we cannot think too much about. Of course we endeavor to remove the diseased tissue in a great many of our laparatomies, but in cases of small cirrhotic ovaries, in cases of pain from stretching and adhesions, etc., the removal of the ovaries themselves does not make so much difference. I do not believe disease of the ovary is the cause per se of the symptoms, but I think the true cause rests in the ganglia which lie in them. I do not think it makes any difference, but time and again we leave ovarian stroma in our pedicles. Of course I do not think this is a good thing to do. Another point which has been spoken of is metrorrhagia; but a metrorrhagia and a menstruation are very different. There are many cases, with granular tissue left in the uterus, which curetting will cure. However, I think the authorities are going too far when they direct us to curette the uterus once a month after a laparatomy. I think not more than one in ten needs to be curetted. The main thing in a menstruation is the nervous disturbance, and this indicates when we have a true menstruation and when a metrorrhagia. I think Dr. Reed's trouble was caused by leaving a piece of the tube. You have a thin layer of adenoid tissue between the epithelium and the muscular structure of the tube. My plea is, let us open these cases and see what the cause of the trouble is. In my case I was forced to open the abdomen to save the woman's life. None of us now dread laparatomy, if we have a comparatively healthy woman. One other point I wish to speak of is about the removal of the appendages for fibroids. We many times remove these appendages when the tumor is too big. After the tumor grows above the umbilicus it has been said nothing but a hysterectomy will stop it; it is just like a lymphoma, and there is nothing to do but to take it out. I think the case reported this evening, which became cystic, probably had some lymphoid tissue in it. Nothing but the radical operation will do them any good. If the general practitioner would send the small fibroids to us, I think these terrific hysterectomies would be a thing of the past.

Meeting of November 16th, 1893.

The President, WILLIAM H. TAYLOR, M.D., in the Chair.

Dr. Sigmar Stark read a paper on

SHOULDER PRESENTATIONS.1

Dr. Stanton.—I think all obstetrical writers refer to the fact that transverse presentations are very often associated with pelvic deformities. The reason for a frequent association of transverse presentations with pelvic deformities I am not able

¹ See original article, p. 364.

to explain, but I suppose it is the greater obliquity of the brim and the greater difficulty for the head to find entrance to the pelvis. Also, in these women there are usually other deformities; they are short in stature and their abdomens are short and

often enlarged transversely.

Dr. Palmer.—I have no doubt all the conditions assigned in the causation of this trouble of parturition exist, as mentioned by the different authorities; but, looking over my past experience, I am pretty well convinced that the pelvic deformity mentioned by the last speaker is the cause of most cases. In former years I had considerable obstetrical practice. The patients were mostly of German ancestry. I am pretty certain almost all, if not all, the shoulder presentations occurred in German women who had a narrowing at the conjugate of the pelvic brim, from what I regarded at the time as the rachitic pelvis. It is easy to understand how a pelvic contraction at the pelvic brim, in its antero-posterior diameter, may obstruct the descent of the fetal head into the pelvic cavity. We know there is a tendency for the head to fall into the pelvic cavity in primiparous women, because of the rigid condition of the abdominal walls, if the pelvis is of normal dimensions, when ordinarily in multiparous women it does not do so, because these walls are relaxed. A rachitic, malformed pelvis prevents the normal descent of the presenting head, and the adjoining shoulder is forced down and made to present.

Dr. Taylor.—I think where the malpositions recur in the same patient it is almost a certain indication of malformation. And George Engelmann, who has written more than any other American on prolapsus of the umbilical cord, traces that to malpositions; and that is almost equivalent to saying there is malposition otherwise, because if the head is all right the cord is not likely to be prolapsed, and so I believe deformity at the brim is more likely to be the cause. The others are undoubtedly true causes, as where there is hydrops amnii or the presence of twins there is likely to be malposition. I can recall three cases of shoulder presentation of the second child in cases of twins.

Dr. Stark, in closing the discussion, said: In the case I reported I have made two examinations of the patient by means of the pelvimeter, and can find no reduction in size of the pelvic measurements. Furthermore, after version had been performed the second child passed through the pelvis very readily, which would point to the fact that there was no reduction in the diameter of the superior strait. I was in hopes Dr. Schwab would say something about the case. The second child was one of the largest children I ever saw born; it weighed, undoubtedly, ten pounds or more. It came out very easily, without any great difficulty, and it took only a few minutes to deliver it. I do not think the other causes mentioned by the gentlemen this evening are so important. Wiegau and Daniel

lay special stress on the deformity of the uterus. They claim it is the cause in the vast majority of cases, and their views are held by the majority of the older writers. Schröder also entertains the view that the transverse position is due to the congenital deformity of the uterus; and, as Spiegelberg says, in the majority of cases this congenital deformity of the uterus is expressive of a uterus bicornis, infra-simplex, or a uterus arcuatus. These are also the views of Siebold and Naegele. I find also, in Hare's "Manual of Obstetrics," the belief expressed that the congenital deformity of the uterus is very frequently the cause of the transverse presentation. Cazeaux and Tarnier express themselves somewhat sceptically about the congenital enlargement of the transverse diameter of the lower segment of the uterus as being causative of such a malposition.

Dr. Wm. H. Taylor read a translation from the German on THE VALUE OF DEEP CERVICAL AND PERINEAL INCISIONS IN LABOR.

Since 1890 Alfred Dührssen, of the University of Berlin, has published several articles in advocacy of a new operation for facilitating delivery in certain cases of protracted labor where there is defective dilatation of the os and the vagina is narrow and rigid. In a paper on the "Anatomy, Physiology, and Pathology of the Portio Vaginalis" he says: I have furnished evidence that in old primiparæ there often is a structural condition of the portio vaginalis, sometimes congenital, sometimes acquired, in which there is absence of elastic fibres, and to which the imperfect dilatation of the os is due. In such cases mechanical dilatation is highly irrational, but my method of incision is altogether appropriate. . . . My operation is applicable where the supravaginal portion of the cervix is fully expanded and the infra-vaginal is imperfectly dilated, and in which, in consequence of this imperfect dilatation, the mother or child is endangered. I have shown that in these cases the delivery may be accomplished in a safe and harmless way, for both mother and child, by removing all obstacles offered by the rigid os, by making four incisions extending through the os uteri to the vaginal junction. No serious bleeding follows the incisions, and sepsis is avoided by exact antiseptic precautions. The incisions are made by seizing the tissue of the cervix between the index and middle fingers of the left hand and cutting with Siebold's scissors. Occasionally after the incision delivery is accomplished by version and extraction by the feet. Usually the forceps is used, the head having been pressed into the pelvis by external pressure. Resistance in the lower third of the vagina may be overcome by more or less deep incisions into it; according to the degree and location of the obstacle is an incision made into the vagina or perineum. In my more recent operations I have made

the vaginal and perineal incisions on but one side, and, for facility in suturing, I have made them in a line midway between the tuber ischii and the anus. After the incision is made in the cervix the head is forced down by outer pressure, and I am convinced by large experience that such pressure is effectual only after all resistance on the part of the os uteri has been removed. Such external pressure does not force the head down when the os is imperfectly dilated.

The indications for this operation must be strictly asserted; it is not to be adopted where the life of neither mother nor child is jeopardized, for in many eases of unyielding os, where incision might seem proper and no danger is present, the use of narcotics, or especially anesthetics, will overcome the resistance. Resort to incision where no urgent reason for termination of the labor

is present is to be condemned.

Preliminary to the operation the supravaginal portion of the

cervix must be fully dilated.

Experience has taught me that four incisions are requisite; with but two the resistance of the cervix is not overcome. Further, it is important that the incisions extend to the vaginal junction. The first incision should be directed backward, the next two to the sides, and the last forward; if the operation be performed otherwise the posterior segment is likely to slip up so that it is difficult or impracticable to reach it to make the incision. Further, if the posterior incision be made first better results in healing are likely to be obtained. From study of the anatomy of the portio vaginalis Dührssen asserts the existence of elastic fibres running from the vaginal wall into the cervix. Now, where, either congenitally or from later degeneration, there is absence of this elastic tissue, we have defective dilatation during labor, and therefore demand for incision; but from the deficiency of elasticity we have the less permanent retraction of the incised tissue, and the parts are consequently more nearly in coaptation and more likely to reunite. Further, regarding the technique of the operation, a speculum is not required; if the edge of the os is firm and unyielding the incision is readily made by holding the cervix between the fingers and cutting with seissors, as described; but this method is not satisfactory if the tissue is soft and yielding. By pressure on the os it may seem to disappear, but when traction is made with forceps it becomes a tense, unyielding ring around the head. In this condition the cervix must be fixed at the point of intended incision by two tenacula or forceps, and the cut made between them. It is not necessary to suture the incision to arrest hemorrhage, and it is doubtful if union is promoted by the suture. Precise adjustment of the edges of the incision is difficult without skilled assistance, and compels prolongation of the anesthesia to an undesirable degree. After the operation is made the child's head must be pressed into the pelvic brim by external pressure.

I regard this proceeding as very important, not only in contracted pelves, but in normal as well, for our experience in delivery of the after-coming head demonstrates the superiority of this pressure to forceps. In this case the almost unanimous verdict is that the head is more safely brought through a contracted pelvis by external pressure than by forceps.

With reference to danger of the operation Dührssen says: If the antiseptic precautions of to-day are adopted there is no danger of sepsis. Of course we may encounter a case where, from protracted labor or want of care, septic inoculation has already occurred; for this the operation must not be held re-

sponsible.

The fear of extensive laceration and consequent dangerous hemorrhage from extraction is groundless. In cases where no incisions are made the cervix tears irregularly and extensively, but where the incisions extend to the vaginal junction no further tension will be placed on the cervix, consequently it will not tear

into the supravaginal structures.

As to the later evil results of deep cervical incisions, they are very insignificant, much less than may follow spontaneous delivery. The incisions do not always heal, so that in many cases the os uteri extends to the vaginal junction; but in seventeen out of twenty-five cases of which the later history was obtained, no ill effects existed. But even if there were bad consequences we should not be deterred from performing the operation, if thereby we avert a seriously threatened danger to the life of mother or child.

This operation is especially commended where speedy delivery is demanded in interest of either mother or child-e.g., in eclampsia, where the mortality is to a certain degree in proportion to the number of convulsions. Narcotics lessen the recurrences, but undoubtedly anesthetics are responsible for some fatalities, therefore are not to be indiscriminately used. Experience clearly teaches that evacuation of the uterus greatly decreases, or even arrests, the convulsive attacks. A therapeutic deduction from these facts is that the sooner the delivery occurs after convulsions begin, the better. But usually the convulsions begin in the early part of labor, long before the os is sufficiently expanded to admit of delivery. In these conditions three methods of speedy delivery have been proposed-viz., manual dilatation of the os, Cesarean section, and deep incisions of the cervix. Manual dilatation is often not satisfactory; Cesarean section is too serious an operation to be resorted to without very urgent reason; but deep cervical incision will facilitate early delivery without endangering the patient. Still further, by early delivery we save the child, which otherwise, in half the cases, perishes either from defective oxygenation of the blood or from protracted narcosis of the mother.

Dr. Stanton.—When it comes to private practice I think

this operation will seldom be resorted to. Very seldom indeed can you get the consent of the patient or her friends to any cutting operation. Many have gone through without operation, with slow dilatation of the os, and this would cause them to object to the operation until the time for it had passed. I think it would not be performed in more than one case in ten in which the operator would be certain in his own mind that it was the best thing. If there were serious impediments which would call for Cesarean section, consent would be more readily given than to this operation, the necessity not being recognized by the patient and friends. If anything were to go wrong with these patients when cutting has been resorted to, the obstetrician would be censured. We must keep in mind the different conditions of resisting os; one is passive and the other is a spasmodie condition. In the passive condition—that is, the rigidity in which there has been no relaxation at any time—the administration of anesthetics does not do a great deal of good, but in conditions of spasm it does. I prefer, though, the repeated administration of chloral. Such a degree of anesthesia as would produce relaxation of the cervix is not to be tried until the time is near for the delivery of the child, while chloral can be given at any stage of labor, and it has a decided influence in relieving the spasm.

Dr. Cleveland.—I indorse almost everything Dr. Stanton has said, yet under certain circumstances I would incise the

rigid os.

Dr. Edwin Ricketts.—I would like to ask the question as to what is considered a rigid os, and how long it should be allowed

to progress before resorting to this operation.

Dr. Taylor.—Dührssen says expressly this operation is not to be adopted in cases where anesthetics or narcotics would relieve the rigidity, and he refers especially to old primiparæ, because in them the elastic fibres have deteriorated and there is not the relaxation that there ought to be in the cervix and os. It is only when the contraction is infravaginal—that is, down about the os itself—that this operation is to be resorted to.

Dr. E. W. Mitchell.—Last year I presented a paper before the Society on the subject of the rigid os, and in that paper I referred to some reports of incisions of the rigid os which did not yield to anesthetics, and indorsed the practice in the limited class of cases in which it is recommended by the author quoted to-night. And if I were to answer the question asked of the President, I should emphatically say I should use the method in the proper cases. I never have used it, but as I look back I can recall two or three cases where I believe it would have been very judicious practice; I believe I could have saved the patients several hours of suffering, and the deep lacerations which resulted might have been avoided. I remember one case where the primipara had a long, tedious first stage, the dilatation of

the upper part of the cervix taking place very slowly, the patient suffering extremely. The infravaginal portion of the cervix remained hard, almost as thick as my thumb, and having something of the feeling that is described by one of the old French writers as that of wash leather. Anesthetics did not relax the infravaginal parts of the cervix. This patient was in labor altogether nearly forty-eight hours. I had watched this case with considerable anxiety, because there had been some albumin in the urine. The urine became very scanty. I had given anesthetics, chloral, and some chloroform, when suddenly she had a severe convulsion. I administered chloroform at once, and Dr. Johnstone kindly responded to my call for assistance. I kept her under chloroform until he came, and then we succeeded in delivering the head, and the woman had no further convulsion, but there was a deep laceration. I am inclined to think that would have been a good case for incision of the os.

Dr. Reed.—I have been interested in this, not because I look upon it especially as a life-saving measure, although it may have that bearing, but because it has a bearing upon the subsequent life of the patient. There are several points that have come up incidentally, but first I cannot help mentioning the point spoken of by Dr. Mitchell. If I had a patient who needed to have this operation performed I would do it, and I would have no trouble about it whatever. I noticed in the paper that the author alluded to the fact that sometimes these incisions did not heal and the os extended up to the fornix vaginæ. Would it not be better to make this a stellate incision, although some would be deep ones? I cannot understand that the further descent of the head will not cause any further increase in pressure at the base of the incisions, as maintained by the author. Certainly he has taken the position that before the incisions are made the internal os should be obliterated by the descent; but certainly that is not the mechanism of dilatation experienced in delivery, and therefore I cannot see that this segment of the uterus should be subjected to greater distention. It seems to me if I were to leave this operation at any point short of the period of completion he alludes to, I would omit the lateral incision he refers to, because you are thereby in danger of wounding more vessels and producing greater hemorrhage.

Dr. Palmer.—I entirely believe, under certain contingencies, this operation is justifiable. It is justifiable, however, very rarely. I have looked upon these cases of rigid os as being of two kinds, first functional, and second organic. The functional is, of course, more general, and exists usually in primiparous women, and is controlled by hot water, chloral, and chloroform; but of these I have found chloroform the most useful. The organic arises from structural change in the cervix, and there has been a prior chronic cervical parenchymatous endometritis, the os is hard, rigid, and will not dilate from the

forces of parturition. Then I believe that the incision is justifiable, when it will not dilate from chloroform, chloral, or hypodermic injections of morphia or anything else. I practised this operation once some fifteen years ago. The case had been in labor twenty-four hours prior to being seen by Dr. Webb. I waited with him all night, but finally I took a pair of Hodge's scissors, put them into the vagina, guided by the fingers of the left hand, and slit the cervix in several places, not very deeply at any place. The woman was finally delivered spontaneously; she had no trouble, and the child was born alive.

Dr. Edwin Ricketts.—What is the condition of the cervix

after this operation, as to future deliveries?

Dr. Taylor.—Dührssen reports the later history of seventeen out of twenty-five cases, and he says there were no ill conse-

quences.

Dr. Taylor, in closing, said: In answer to Dr. Reed's question, I had a case six weeks or two months ago in which there were the conditions represented by Dührssen's cases. The patient was an old primipara; the membranes ruptured early; she had mild labor pains for three or four days, but for twelve hours before delivery they were decidedly strong and vigorous, and the os did not dilate, although chloral and chloroform were administered to the obstetrical degree very frequently. Finally I delivered her, with the forceps, of a dead child. I have been sorry ever since I did not deliver that child twelve hours earlier; I believe it would have lived. To have done so it would have been necessary to make use of this operation, and I am sorry I did not. I have great faith in the forceps as a dilator. I think very often we can anesthetize the patient, make a little manual dilatation, then introduce the blade of the forceps, and then very carefully dilate the os. Isaac Taylor, of New York, who was probably the most eminent obstetrician in New York until he died, invented a forceps specially designed for dilating the os. I have seen very few obstetricians who know of Taylor's instrument. I referred to it at a meeting of the American Medical Association in Washington some six or eight years ago, and it happened Isaac Taylor himself was present at the time. Campbell, of Georgia, who was afterward president of the Association, indorsed it most heartily. It is a queer instrument, arranged to lock at different points, so as to make the blades of different lengths. Now, with an instrument that can be introduced into a narrow os, I believe we can often deliver a woman much more satisfactorily than to let her wait. Johnson, who was the master of the Rotunda Hospital, first introduced this method of dilating the os. He made it a much more popular means of delivery than it had ever been before, and I have been very well satisfied with it. Several gentlemen have referred to the superficial incision. Dührssen severely condemns superficial incisions. They do not accomplish the purpose, but the deep ones undoubtedly do. The vagina must be enlarged sufficiently to allow the head to pass, and the incisions must be made just to the juncture.

Dr. Edwin Ricketts made a few remarks on

THE FIRST TOTAL EXTIRPATION OF THE UTERUS.

Through the kindness of Dr. Cotton, of Portsmouth, O., I am enabled to give you the name of the first man in this country who did total extirpation of the uterus per abdominal section for malignancy. The following is a portion of a letter received from Dr. Cotton, dated November 6th, 1891: "There is a mistake somewhere in regard to the nature of the operation performed on Mrs. F. B. by the late Dr. A. B. Jones, of this city [Portsmouth]. It was not a vaginal hysterectomy, but an extirpation of the entire uterus through the abdominal walls for malignant disease. The patient died in the course of an hour afterward. The date was December 12th, 1867. I administered the anesthetic, which the patient bore well, but died in one hour from the shock." Signed, Dr. D. B. Cotton. The operator used ligatures and cut them short. He took an ordinary glass oil lamp that had a globe about as large as a man's fist, and closed up the end where the burner screws in, and introduced this into the vagina to make pressure so as to keep the intestines in place. I put this on record, as it is the earliest operation of this kind done in this country.

TRANSACTIONS OF THE WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY.

Stated Meeting, November 4th, 1892.

The President, D. W. PRENTISS, M.D., in the Chair.

Dr. Llewellyn Eliot read a paper entitled

THE COMPLICATIONS OF THE PUERPERAL STATE.

Dr. A. F. A. King said that most of the views expressed by Dr. Eliot in his paper were in accord with the general opinion of the profession. As to laparatomy in puerperal septicemia, he thought that Dr. Eliot was too emphatic, as that procedure was still sub judice. The treatment recommended in lacerations of the cervix and perineum was that usually pursued. He was

¹ See original article, p. 354.

not aware that ligation of the circular artery was practised in hemorrhage in laceration of the cervix. He thought it would be better to include the artery in the suture while repairing the laceration, or to twist the artery. The use of iodoform gauze in the uterus was modern, but was usual in septic conditions following labor and abortions. The use of an anesthetic soon after labor was likely to lead to hemorrhage. That should be

carefully watched.

Dr. S. C. Buser said he was surprised at a number of things stated in the paper. That the use of ergot was attended with laceration of the cervix in the majority of labors he did not believe. Perhaps it was so in first labors. Immediate suturing of laceration of the cervix was advocated by only a few. recent discussion in the New York Academy of Medicine the weight of opinion was against it. He doubted if simple suturing of the lacerated cervix would be sufficient should the circular artery be ruptured during labor. Dr. Eliot's case of laceration of cervix and perineum was remarkable for its complete recovery. Dr. Busey said he did not believe that every woman who had a lacerated cervix needed the operation of trachelorrhaphy. It was of consequence to consider how sepsis was produced. Later pathologists agreed that it was introduced from without. When it had once been introduced into the system it could not be cured by douching the uterus. Such a procedure would keep the uterus clean, but would not cure the disease. Prevention was the thing to be striven for. He agreed with the idea of non-use of high-grade antipyretics, but was surprised to hear that they were of use in the later stages of so depressing a disease as septicemia.

In post-partum hemorrhage it was absolutely necessary to produce contraction of the uterus after it was emptied. He had the greatest confidence in the value and use of ergot. He had seen cases where he could produce contraction by heat or cold, but could not maintain it. He depended much upon ergot producing and continuing physiological contraction. He did not approve of laparatomy in septicemia, but in chronic pus tubes, or pus in the abdomen, laparatomy was indicated. He said the paper gave details of practice that were in general use.

Dr. T. C. Smith said that Dr. Eliot had omitted any reference to another complication that sometimes occurred—namely, polygalactia. He had had a case during the past year. A young primipara, in whom the milk flow was established as usual, called his attention to the excessive quantity of milk that flowed from her breasts during the intervals of nursing. When she awoke in the morning her clothing and bed were completely saturated with the milk. He directed the overflow to be collected and preserved. The quantity secured in twenty-four hours, after the child had had plenty, was half a gallon. The treatment consisted in the administration of ergot and the

local application of belladonna and camphor. These were without any influence. He afterward used antipyrin and opium, when the quantity began to be diminished. After three months the secretion ceased entirely.

Dr. S. S. Adams said he thought Dr. Smith's credulity was excessive; he should have allowed a great deal for the nurse's

exaggeration.

Dr. Smith said the milk was collected and measured.

Dr. S. S. Adams said his first experience with an adherent placenta occurred a few nights before. After a tedious labor a small child was delivered, but the placenta was retained though he had followed Credé's method of expression. He gave one drachm of ergot, which had no effect. He afterward introduced his hand and with much difficulty peeled the placenta off. He explained as the probable cause of the adhesion that the woman had a hemorrhage from the uterus several months prior to the delivery, and at the point of separation of the placenta inflam-

matory adhesion occurred.

Dr. H. L. E. Johnson said that in his hospital experience laceration of the cervix occurred in seventy to eighty per cent of all cases. Many of these, even when bilateral, healed without any operation. There was much discussion as to the propriety of primary trachelorrhaphy at that time (1882–83). It was practised in the hospital; he had done the operation himself with good and bad results. His first case was one of hemorrhage from laceration of the circular artery, which hemorrhage was controlled by the sutures, and the result was a complete cure. In another case operated upon the result was worse than the original damage. He believed that the primary operation was now entirely abandoned because so many recovered without operation. Usually, in performing trachelorrhaphy, he used no general anesthetic, preferring cocaine locally to general anesthesia.

Dr. E. L. Tompkins said that in secondary operations upon the cervix cocaine locally was not so good as general anesthesia, because it had caused sloughing. Hanks, of New York, had

abandoned its use.

Dr. H. L. E. Johnson asked if the cocaine had been painted on the surfaces or had been injected into the tissues.

Dr. Tompkins replied, injected into the tissues.

Dr. Johnson, continuing, said that ordinarily the pain was not marked; when it did occur it was caused by dragging on the uterus. He always operated without pulling the uterus down,

and it was almost painless.

Dr. L. Eliot, in closing the discussion, said he must apologize to the Society for the number of topics introduced. As to laparatomy in septic infection, not all cases required it. All injuries of limbs did not require amputation. When all other means had failed he would not shrink from the operation. He was not afraid of hemorrhage following anesthesia. He preferred

chloroform and used it freely. He did not give it, however, whenever the patient called for it. He would not be afraid of an anesthetic three or four days after labor. In immediate operation after labor for laceration of the cervix little traction was necessary to bring the uterus down. Should the operation prove a failure he would abandon it. He was a recent convert to immediate repair of the perineum.

Stated Meeting, November 18th, 1892.

The President, D. W. PRENTISS, M.D., in the Chair.

Dr. W. P. CARR read a paper entitled

CHRONIC SALPINGITIS, WITH REPORT OF FIVE CASES.1

Dr. Joseph Taber Johnson, being requested to open the discussion, said that Dr. Carr was to be congratulated on the uniform success attained in all his cases. It was unusual that no untoward event should have overtaken him. The general sentiment was that the operation of laparatomy should not be done for the simple relief of pelvic pain. In the minds of many, pain was not considered as a condition grave enough to justify the operation. When there was much and persistent pain in that region, which was unrelieved by treatment, he believed that laparatomy was the thing to be done. In several of the cases reported he thought that Dr. Carr had been rather daring, for had his operations miscarried he would have been subjected to censure. In those cases where the adhesions were described as not being great, laparatomy was a safe operation. One of Emmet's wise sayings was that there was not so much danger in what we took out of the abdomen as what we put in. He did not mean to say that there was no danger attending the operation. All operations were more or less hazardous. Ligatures sometimes gave way, and there was subsequent hemorrhage which might prove fatal. He said there was a conservative operation in which the abdomen was opened, the adhesions liberated, cysts punctured, the ovaries not removed, and recovery took place. If the tubes were closed they were not likely to become open again. Pozzi and Martin recommended that a small, hollow probe should be passed into the tubes, opening up their lumen, and, the probe being removed, the ovaries and tubes might thus be preserved. He described Kelly's operation for fixing the ovaries and sewing the uterus to the abdominal wall. The cases described by Dr. Carr were difficult to deal with; they were on the border line, and required the nicest discrimination to determine as to the propriety of an operation. Should failure follow the operation in these cases, censure was almost sure to come. The remedy

¹ See original article, p. 346.

might be more dangerous than the disease. He thought the operation justifiable when the patient was made aware of the danger. As to cases of epilepsy, he had operated on two. One was much benefited immediately, while in the other there was no improvement until considerable time had elapsed after the operation. He referred to Dr. J. B. Hamilton's case, which received no immediate benefit from the operation, but later was much improved. All those cases were improving. Dr. Johnson said there was no great danger in laparatomy when the operation was properly done.

Dr. S. C. Busey asked Dr. Carr in what condition he found the uterus in the case upon which Alexander's operation had

een performed.

Dr. Carr replied that it had made no change.

Dr. A. F. A. King said the discussion flagged because so few of us were operators. The conservative ones were those who did not operate, while the surgeons favored operation. Recently he had observed the operation at Columbia Hospital, where laparatomy was frequently done. The cases that he examined did not seem to him to justify such an operation. But he was overruled, and properly so. He was now becoming a convert to the operation, because the danger seemed so little. Dr. Johnson had referred to drainage of the tubes after the abdomen had been opened. It occurred to him that the tubes might be catheterized by drawing the uterus down, and thus obviate the necessity of laparatomy in some of these cases. Mundé was now more conservative than formerly in his treatment of these cases. The etiology of these tubal and ovarian cases was interesting. There seemed to be so many cases now, while apparently there were so few formerly. Perhaps the diagnosis is now more thoroughly and accurately made.

Dr. G. N. Acker said that, with all the specimens before him, he was not in favor of laparatomy in hystero-epilepsy. He mentioned a case that was much benefited by a slight operation which involved no great danger. He said that Dr. Eliot had

successfully catheterized the tubes.

Dr. W. P. Carr, in closing the discussion, said that it was one of the hardest things to be understood. He had confined his remarks to chronic salpingitis. He recommended that all other therapeutic methods should be thoroughly tried before resorting to operation. He did not believe in allowing crippled and bedridden women to be overlooked when an operation might relieve them. He would sooner relieve a suffering invalid than save a life to be full of misery. He was not sure that it was not the highest function to relieve rather than to simply save. Almost every death from operation was because all the disease had not been removed. In a number of post-mortems made in the hospital the tissues were found to be infiltrated. The mortality was two to five per cent. If the tubes were removed without

rupture the mortality was not one in a thousand. Puncture of the cyst, with drainage, was more dangerous than the removal. As to whether it was pus in the tubes or not, pathelogically, amounted to the same thing. He had injected some of this fluid, other than pus, into a cat and produced peritonitis. Catheterization of the tubes in such cases as he had reported was impractical. As to sterilizing a woman by removing her ovaries and tubes, she was already so in such cases as he had reported.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Meeting of January 3d, 1894. The President, G. E. Herman, in the Chair.

A paper by The President on

SIX MORE CASES OF PREGNANCY AND LABOR WITH BRIGHT'S DISEASE

was then read.

Case I.—Third pregnancy. Eclampsia with second labor, and persistent subsequent albuminuria. Third pregnancy beginning eleven months afterward. Edema and short breath coming on in second month of pregnancy. Arterial degeneration. Cardiac hypertrophy. Old retinitis. Urine containing one-third albumin and casts. Premature delivery at end of fifth month. No fits. Slight diuresis following delivery. No marked diminution in albumin immediately following delivery, but some diminution following prolonged rest. Percentage of urea much, and absolute quantity of urea somewhat, below the average. No marked alteration in urea percentage accompanying delivery. Death six months afterward.

Case II.—Tenth pregnancy. Ill twelve months before delivery. Urine containing half albumin. Polyuria. Deficient urea elimination. Bronchitis. No retinitis. Labor induced in ninth month. Death of child on delivery. Persistence of bronchitis. Diarrhea. Increased urea excretion and diminution of albuminuria following delivery. Irregular slight pyrexia. Death a month afterward. Chronic tubal nephritis.

Case III.—Fifth pregnancy. Bone disease followed by amputation of thigh eleven years previously. Edema dating from fourth labor, four years previously. No other symptoms. Anemia. No retinitis. Polyuria. Urine containing half albumin, almost entirely serum-albumin. Slight diminution of albumin under milk diet. Urea excretion only slightly below normal.

Labor induced at eight months. Child living. Diuresis, increase of urea elimination, and still greater diminution of albuminuria following delivery. Good health two years afterward, in spite

of persistent albuminuria.

Case IV.—First pregnancy. Symptoms beginning toward end of seventh month. No retinitis. Urine containing two-thirds albumin and casts. Labor induced at end of eighth month. Increase of albuminuria during labor. Progressive diminution during lying-in. Slight deficiency of urea elimination. Slight polyuria before delivery. Diurcsis following delivery. Child living. Piece of placenta retained, and removed on the ninth day. Good health eleven months afterward.

Case V.—Second pregnancy. Symptoms three weeks before term. Vomiting. Diarrhea. Edema. Labor at term. Lingering first stage accelerated by bougie. Child living. Urine containing casts and a quarter albumin. Increase of albuminuria to one-half during labor. Diuresis after delivery. Diminution of albuminuria during lying-in. Slight diminution in urea excretion. Good health and freedom from albuminuria

six months afterward.

Case VI.—First pregnancy. Symptoms a week before admission. Edema. Weakness; short breath. Cardiac hypertrophy. Urine containing one-third albumin. Labor induced at end of eighth month. Child living. No fits. Slight deficiency of urea elimination. Diuresis, increased urea elimination, and diminution of albuminuria following delivery. Good health

a year and eight months afterward.

The author compares these cases with others reported in former communications by him to the Society, in all eleven in number, and then compares these eleven cases with twelve cases of puerperal eclampsia, also published by him in the Society's Transactions. He draws the following general conclusion: There are at least two kinds of renal disease to which a pregnant woman is specially liable. One of these is a very acute disease, in which premonitory symptoms are either absent or of duration measurable by hours or days. It attacks chiefly primigravidæ. It often causes intra-uterine death of the child. It is attended with extreme diminution of the quantity of urine, and the small quantity of urine that is passed is greatly deficient in urea, but contains enough albumin to make it solid on boiling. This disease is accompanied with rapidly recurring fits. If it run a favorable course the fits cease, then the urine increases in amount and the percentage of urea in it rises. If the excretion of urea be not re-established the case quickly ends fatally. Such cases seldom, if ever, pass into chronic Bright's disease.

The other is a disease which attacks older subjects, chiefly those who have had children before. Its premonitory symptoms extend over a period measurable by weeks or months. It often leads to intra-uterine death of the child. It is accompa-

nied generally by increase in the quantity of urine, with copious loss of albumin, but not so much in proportion to the urine as in the more acute disease, and with diminution in the elimination of urea, but not nearly so great a diminution as in the more acute disease. Delivery is followed by temporarily increased diuresis and increase in the urea elimination. When this increase is considerable the albuminuria usually diminishes and disappears and the patient gets well. When the increase is only slight the albuminuria persists and the case becomes one of chronic Bright's disease. This form of disease is sometimes attended with fits, but generally not. The presence of albuminuric retinitis affects the prognosis unfavorably. When the pressure within the abdomen is greater than usual the amount of urine may be diminished, but in such cases the diuresis and the augmentation of the urea elimination after delivery are proportionately greater.

In the acute disease which causes eclampsia, and in the chronic disease when it is associated with excessive intra-abdominal pressure, much of the albumin is paraglobulin. The cases in which the albumin is mainly serum-albumin generally either

die or pass into chronic Bright's disease.

Dr. Cullingworth thanked the President not only for the paper just read, but for the series of which this formed the conclusion, the whole being of the highest scientific value. Numberless theories as to puerperal albuminuria and eclampsia have been propounded, but all more or less failed to explain the phenomenon. What was now wanted was not more theories, but an unbiassed and accurate clinical record of a series of cases such as Dr. Herman furnished.

Dr. A. Routh mentioned two cases—one in which the urine contained serum-albumin, and in the retina were hemorrhages. This patient had eclampsia, miscarried, and did well, the albumin disappearing in a month. (This patient also complained during her pregnancy of severe epigastric pain.) The second patient had no retinitis, no epigastric pain, no eclampsia, and the urine contained paraglobulin. He (Dr. Routh) asked for information as to the significance of paraglobulin in the urine, and as to epigastric pain, which he looked upon as an unfavor-

able symptom.

Dr. Duncan thought the series of papers by the author on the subject under discussion of the greatest importance, both to the profession and the public. He agreed with the author as to there being two classes of cases of renal disease associated with pregnancy. He thought that when there was marked retinal disease the prognosis was much graver than when such a condition was absent. He mentioned two cases of pregnancy associated with albuminuria in which there were kidney disease and well-marked albuminuric retinitis; in both he induced abortion, with the result that in one of the cases the retinal disease was

much improved, but in the other the total blindness which existed at the time of emptying the uterus still continued two months later when the patient left the hospital. He thought the uterus should be at once emptied when there was any indication of retinal mischief.

Dr. Peter Horrocks said that his own experience coincided with that of Dr. Herman regarding the gravity of retinal hemorrhages in cases of eclampsia. He could not remember a single recovery where such a lesion was present. He thought the new facts elicited by the careful observations made would enable one

to suggest suitable treatment in different cases.

THE PRESIDENT, in reply, said Dr. Routh's cases were very interesting, and it was to be hoped a full account of them would be published. He (the author) had stated the conclusions to which his cases pointed, but the cases were too few to settle finally the import of the amount of paraglobulin. He did not think that the acute disease which produced eclampsia was acute nephritis. He agreed with Dr. Duncan that if albuminuric retinitis were present during pregnancy, labor should be induced; but he would go further and urge the prompt termination of pregnancy in any case in which this condition was complicated with unquestionable kidney disease. A pregnant woman with kidney disease was liable to eclampsia, and the probability of a temporary renal change passing into chronic Bright's disease was greater if the pregnancy went on; and, in addition, Bright's disease often caused intra-uterine death of the child. He thought that it was desirable to limit the application of the term eclampsia to cases of albuminuria with convulsions; the pathology of cases in which there was no albumin was quite different, and he thought it would be better to speak of these simply as cases of "fits" or convulsions, not as eclampsia.

A paper by Dr. Gow,

NOTE ON VAGINAL SECRETION,

was next read. The author sums up as follows:

Facts are brought forward to prove that the vagina secretes.
 The secretion is whitish and opaque, and resembles in appearance thick starch mucilage.

3. The opacity of the secretion is due to the presence in it of

numerous flat, nucleolated cells.

4. Chemically the fluid is albuminous in nature, and there is

no evidence of the presence of mucin.

- 5. The reaction is acid, but the fluid when secreted is alkaline. The acidity depends on decomposition from the presence of bacteria.

6. The possible nature of the acid is discussed.

DR. Lewers said he had noted that after extirpation of the atterns the vagina was not less moist than normal.

Dr. Horrocks had always thought the vagina secreted, but

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he considered it had yet to be proved that the secretion was alkaline at first. He was sceptical as to the presence of bacteria in the vagina of a healthy woman. Secretions from virgin vaginæ would have to be examined before the points could be settled, and it was obviously only on rare occasions that such secretion could be obtained.

Dr. Gow, in reply, said there had been many experiments to prove that there were bacteria in the healthy vagina, though there was no suggestion that such bacteria were pathogenic. He in his experiments had tried to show that if organisms are excluded from the vagina the secretion is alkaline. It would be very difficult to carry out Dr. Horrocks' suggestion and make experiments, similar to those described in the paper, on single women. Moreover, the presence of cervical secretion would invalidate the results.

REVIEWS.

CLINICAL GYNECOLOGY: BEING A HANDBOOK OF DISEASES PECULIAR TO WOMEN. By THOMAS MORE MADDEN, F.R.C.S. Ed., Obstetric Physician and Gynecologist, Mater Misericordiæ Hospital, Dublin, etc. Philadelphia: J. B. Lippincott Company, 1893. 259 illustrations, pp. 562.

For a quarter of a century Dr. Madden has taught and practised gynecology. In the volume before us he epitomizes this teaching and this practice, aiming to do justice to the views of others, but stating chiefly that which he himself has observed at the bedside and has there found of value as remedial agents, both medical and surgical. "The dicta of foreign professors" have had but little weight with Dr. Madden in shaping his practice: it is not to France or to Germany that he has turned for counsel; it is from American and British sources that he has chiefly culled his knowledge, "inasmuch as modern gynecology unquestionably owes its present development chiefly to the influence and teaching" of these two schools. In a measure Dr. Madden is unquestionably right, for we have little sympathy with those who ever look to Germany as the fountain-head of all gynecological knowledge. We submit, however, that clinical teaching will rest on a broader and on a sounder foundation which takes full account of all that has emanated from Germany in particular and from France to a lesser degree, since the reciprocal influence of the various schools has unitedly resulted in our modern gynecology. The great exponent of operative gynecology, Tait, for instance, will not be accepted as a uniform guide in other countries, any more than Emmet, amongst Americans, has been able or desirous of throwing into the shadow the very valuable, and sometimes more valuable, teaching of the

German or the French. As might be expected, therefore, Dr. Madden's lectures are a trifle narrow and a trifle antiquated. From the standpoint which he has assumed he has done well; from the standpoint he might have assumed he would have done much better. Whilst there is much in this work which the student could not do better than to take for his guide, there is also much which we should be loath to have him accept as

gospel truth.

In the chapter on methods of investigation we note the favorite English statement that the left-lateral position is preferable for examination, for the reason that it is "less repugnant to our countrywoman's innate sense of delicacy." It is not a question of the greater "delicacy" of the British over the German or American woman which should carry weight with the student; it is a question of accuracy in diagnosis, and this is best secured through the bimanual in the dorsal position—a position in which there need be absolutely no more exposure

than in the left lateral.

The uterine sound is considered as indispensable to the gynecologist as are the stethoscope and the thermometer to the
clinician. "By its aid alone can we ascertain the exact size and
position of the uterus"; a contra-indication is "the existence of
a cellulitis." These statements should not figure in any work
on modern gynecology. The student should rather be taught
never to use the sound except in the rare instances where otherwise a uterine cannot be differentiated from an extra-uterine
growth. Examination under anesthesia is preferable in any
event. It is not traumatism from the sound which we fear, but
dirt. The student and the practitioner are not able, in routine
office or dispensary practice, to cleanse the genital tract sufficiently to justify the introduction of the sound or any other

instrument into the uterine cavity.

In the chapter on "Injuries to the Perineum" we find the antiquated directions that the bowels should be kept constipated, that the knees should be tied together, and that the vagina should be syringed out with warm water to keep the parts aseptic. The fact is that the patient's condition is the better if the bowels are not kept constipated; separation of the legs to a moderate degree does not put the muscles of the pelvic floor or perineum on the stretch; if the field of operation is aseptic at the start, The old Baker syringing is unnecessary and may be harmful. Brown operation, which gives a beautiful skin perineum, is described at length; to Goodell, of Philadelphia, is credited a cut the paternity of which, we believe, he will disavow; Mr. Tait's (called Dr. in this place) flap operation and Duke's operation are favored. This chapter we take as one instance of the truth of our statement that the author might have learned to advantage by consulting some "foreign professors."

In the chapter on "Lacerations of the Cervix" we note the

following, and quote it with approval: "In certain cases of extensive stellate laceration of long standing . . . I have found trachelorrhaphy inapplicable or useless. In such a case" relief is afforded only through "amputation of the mutilated and diseased cervix." We believe Dr. Madden might have gone further and stated that only minor lacerations of the cervix should be subjected to trachelorrhaphy, and all other to amputation.

In the treatment of chronic endometritis, whilst the value of the curette is recognized and whilst the old-fashioned and useless intra-uterine applications are not specifically praised, we regret to find the treatment superior to all others—drainage by gauze—not emphasized, and we condemn most emphatically the teaching that the application of fuming nitric acid is justifiable. Short of malignant disease of the endometrium (which calls for speedy extirpation of the uterus), we do not know of any grade of inflammation which will not yield to thorough curetting and

drainage—the uterine adnexa being healthy.

In reference to the surgical treatment of uterine fibroids Dr. Madden rightly assumes a most conservative position. In instances where an operation seems desirable he favors opphorectomy to a greater extent than, it appears to us, the trend of modern progress justifies. In his opinion, however, he is largely fortified by Mr. Tait's reported results. Total hysterectomy, in this country at least, has been so perfected in its technique as to call for more extended notice in a work printed as late as 1893. It is to be remembered that a uterine fibroma which demands operation, even under Dr. Madden's limited indications, is, as a rule, associated with a diseased uterus, and, the surgeon's aim being to cure his patient, this is best secured through extirpation of the uterus with its tumor as well as the appendages, when, as can be proven to-day, the mortality rate is as low as from ophorectomy in complicated instances.

Dr. Madden's position in regard to hysterectomy for malignant disease of the uterus is thus summarized: "For my own part, bearing in view the enormous mortality too commonly supervening in operations for the extirpation of the cancerous uterus, whether by abdominal or vaginal methods, as well as the frequent recurrence of the disease in those who survive the immediate consequences of such operations, I cannot regard their employment, as yet at least, as proven to be expedient or justifiable as a general rule of practice in eases of uterine cancer."

We believe that a careful study of the accumulated data of the past few years should have led Dr. Madden to look with more favor on both vaginal and abdominal hysterectomy. The latter has no longer, when performed in suitable cases, the mortality of over seventy per cent he claims for it, and the ultimate results from vaginal hysterectomy are year by year bettering.

On page 243 "Cameron's operation" is described—the latter consisting in what has been variously termed "Sänger's opera-

tion" and preferably the "modern" Cesarean section. Whilst we are only too ready to give Dr. Cameron great and merited credit for the excellent record he has secured through resort to timely Cesarean section, we would protest against the operation being called after him. He and numerous others simply followed the footsteps of Sänger and Leopold, even as they in turn were indebted to others for certain of the steps which elevate the Cesarean section to the sphere of a life-saving operation. Further, the description of the operation deemed sufficient by Madden is utterly inadequate—indeed, should the student take this description as a guide in practice his results would simply damn the operation altogether. "The edges of the uterine incision are everted by an assistant and deep carbolized sutures are inserted"! This is not Cameron's operation, we trust; it certainly does not represent the technique of the modern Cesarean section. The sero-serous suture, following the deep sutures, is practically the important step which guards against gaping of the uterine incision and hemorrhage. It seems inexcusable, after all that has been written on the subject, for an author of to-day to rest satisfied with the meagre and erroncous teaching just

The chapters dealing with displacements and flexions of the uterus are, from a modern standpoint, faulty, in that too much stress is laid on mere backward or forward falling of the uterus and on flexion per se. This fault is shared by the majority of text books, however, and may therefore in a measure be excused. The fact is, that symptom follows uncomplicated uterine displacement chiefly because of downward sagging of the organ; and the further fact is that flexion per se is not a causal factor of symptom, but the associated lack of drainage and consequent endometritis. Given a displacement not complicated by tuboovarian disease or its sequelæ, and measures which aim at restoration of the pelvic floor will usually suffice for cure, provided the cervix be repaired or amoutated in case it is torn. Similarly, the cure of endometritis (uncomplicated by disease of the adnexa) through divulsion, curetting, and drainage will render unnecessary resort to pessaries, especially that barbarous instrument—an agent for harm instead of for good—the stem pessary. The fact is that the whole subject of uterine displacements is needlessly complicated by the reproduction in book after book of manifold pessaries, including, as in the present, that invention of well-nigh the evil one, the Zwanck pessary, which, by the way, is highly favored by Madden.

Operative measures for the cure of displacements are not indorsed by Madden. He objects to ventrofixation in toto on the ground that it is unnecessary, not justifiable, and as "constituting a grave danger should the patient again become pregnant." This will be surprising news to many a gynecologist on this as well as the other side of the Atlantic! But then Dr. Madden is

able to dispense with this and allied methods because, to quote again, in case of procidentia "it will frequently be found necessary to restore a lacerated perineum [italies ours] as a preliminary to the retention of the uterus in situ" by a Zwanck pessary! It is hardly necessary to add that adequate description of methods of restoring the integrity of the pelvic floor fails in this work.

Part IV., devoted to a "Consideration of Diseases of the Uterine Appendages," is quite satisfactory from a modern standpoint. Here and there, however, we find practices inculcated of which, we believe, the student should beware. We do not think, for instance, that it is quite fair to a number of reputable and honest workers to term operations which aim at simply freeing diseased appendages from adhesions, or the purpose of which is, where possible, to restore the lumen of the tube. "fancy operations" emanating from "transcendental scientists or enthusiastic faddists." Whilst the utility of such measures is by no means proven, efforts in the direction of saving the appendages call for a certain amount of respect and not for derision. It is questionable, indeed, if attempts at aspiration and disinfection of the tube after exposure through abdominal section do not rest on a more scientific basis than a method highly commended by Madden—aspiration per vaginam. The latter is open to the charge of being a "blind" operation, to say no more, in view of the utter impossibility of being certain that more than one loculus of a distended tube has thus been emptied. Far better free incision per vaginam, exploration by the finger, and drainage. Further, a writer who describes with commendation that exceedingly hypothetical procedure, catheterization of the Fallopian tubes, should think twice before casting the stone of derision at methods which, to say the least, aim at a possibility.

Dr. Madden is a firm believer in the mechanical theory of dysmenorrhea. It seems to us that he lays far too much stress on mere flexion as a causal factor, overlooking that far more important, if not altogether important element, endometritis. The method he advocates for cure—rapid dilatation—is excellent as far as it goes; it would be better if he added thorough cureting and drainage, for a prolonged interval, by gauze. We question the asepticism of the application of a saturated solution of alum-glycerin on a "camel's-hair pencil," and we fail to discover the slightest call for syringing the uterus out daily

(for eight to ten days) with hot water.

The concluding portion of this work deals with the diseases and abnormalities of pregnancy. Under the treatment of impending miscarriage we regret to find Dr. Madden in favor of a method which we had hoped every tyro in obstetrics had been warned against—the use of the sponge vaginal tampon, to our mind one of the most prolific causes of sepsis post abortum. "In cases of slight retroversion or retroflexion the displacement may

be remedied by . . . supporting the replaced uterus with a roller pessary and keeping the patient lying on her face for a few days." Would not the lateral position suffice as well, whilst conducing far more to the comfort of the poor woman!

The chapter on ectopic gestation is founded on the teaching of Mr. Tait. Herein Dr. Madden shows good judgment—judgment, however, tempered with greater wisdom had he refrained from quoting with such strong approval and emphasis those words of Tait, which we had never taken seriously, which characterize as "abortion-mongers" all those who see fit to destroy the ovum because in their mature judgment the woman's

immediate safety is thus best secured.

Necessarily, in reviewing such an elaborate work as this. attention has been chiefly directed to such points as seem to call for criticism. We would have it understood, however, that the good in this work fairly balances what, in our judgment, is evil. Obviously a distinguished and active professional career like Dr. Madden's has yielded results which all should weigh in the scale against the less tested methods of the present. Conservatism-preservation, so to speak-is the keynote of these lectures, and where our criticism has been evoked it has largely been because this element of just medicine and surgery has been directed rather in the channels of the past than in those of the present. Dr. Madden concludes his lectures with the expression of the hope that the principles and methods of gynecological treatment which he has endeavored to impress may be found not only useful at the present time, but also may become fructified and improved in the future practice of his readers. We echo this wish with the further hope that many of the methods commended by Dr. Madden be not adopted until the individual observer has conscientiously canvassed the writings and has faithfully followed the practice of others. Thus alone will disappointment be avoided.

FORMULAIRE OBSTETRICALE ILLUSTRÉ; FORMULAIRE GYNÉCOLO-GIQUE ILLUSTRÉ.—ILLUSTRATED OBSTETRICAL FORMULARY AND ILLUSTRATED GYNECOLOGICAL FORMULARY. By A. AUVARD, M.D., Hospital Acconcheur. Paris: Rueff & Co. Pp. 100 each.

Whatever the existing prejudice against formularies, it would certainly have to be laid aside in favor of the two compact little volumes offered by their distinguished author as a help to the student who has already made a profound study, in more exhaustive works, of the maladies described. The name of formulary, he remarks, does not in this case mean a mere collection of prescriptions, but a book in which a series of treatments is formulated. A few diseases are clearly and vividly described, and methods indicated for their relief. Vivid is indeed the word to use in regard to these volumes, for, even without the excel-

lent text, the illustrations could not fail to cast light upon many conditions which are sometimes, it is feared, but vaguely pictured in the student's mind. Some of these are schematic, and, as a diagram should do, produce an instant impression upon the mind. Such is, in the work on obstetrics, the picture illustrative of uncontrollable vomiting, in which is depicted the stomach with lines converging to it from brain, kidneys, intestines, and uterus, thus giving at a glance the possible sources of the trouble. The drawings representing placenta previa in relation to various presentations are excellent, also the diagram of curves showing the several forms of eclamptic attacks, and one illustrating degrees of cervical laceration. In the work on gynecology there is the same admirable lucidity, and perhaps even more originality, in the pictures, which cannot fail to make an immediate impression upon the student's mind. We would mention the diagrams of cicatricial adhesions, of genito-urinary and genitofeeal fistule, of perigenital adhesions, and those of the various malpositions of the uterus, as being of unusual excellence. It is, however, merely a choice among good things. The text is like a compressed tablet, in that it contains much in little, without superfluity, and is palatable. The directions are practical in the The illustrations are many of them colored, which adds to their perspicuity, while the general attractiveness of the books, with their limp Russia-leather covers and clear although small type, is beyond praise. A. R. S.

ABSTRACT.

BUDIN: INSUFFLATION IN RESUSCITATION OF THE NEWLY Born (Arch. de Toc. et de Gyn., July, 1893).—Taking as his text the case of a child who as a result of insufflation breathed a few times, became cyanosed, and finally died, and in whom at the post-mortem was found a thick and nearly solid plug of mucus just below the glottis, Budin urges the necessity for special care in the resuscitation of apparently asphyxiated infants. He describes Sylvester's method, which, he says, is frequently attended by failure, as the drawing forward of the tongue does not insure permeability of the air tract, and the great flaceidity of the organs prevents the entrance of air. Neither is Schultze's method invariably successful; it could certainly have had no effect in the removal of the plug of mucus, which adhered tenaciously to the tracheal walls. methods of treatment are: insufflation by the mouth, by Chaussier and Depaul's tubes, and by Ribemont's tubes. In the first named the glairy mucus from the throat and nasal fossæis forced through the nostrils. The tissues of the parts are, however, so flaccid, there being no resistant cartilage present to keep them ABSTRACT. 431

apart, that it is doubtful whether the air can penetrate to the lungs; even if it did so it would push any mucus present forward into the bronchi.

Chaussier's metallic tube is long, flat, and curved; one rounded extremity is introduced into the larynx, the other is shaped to receive the lips of the operator. A little above the laryngeal extremity are two apertures for the entrance of air; a metallic plate and a sponge, placed still higher and at right angles to the tube, are supposed to so protect the glottis that no air can escape into the pharynx, but must all be driven through the trachea.

Depaul modified this instrument by removing this plate and sponge, whose practical was not equal to its theoretical value, and made the end of the tube straight. After introducing it he closed the child's nostrils and the mouth with the two index and middle fingers, and pushed the tube against the vertebral column, thus flattening the esophagus so that no air could escape in this direction. In spite of the real service rendered by this tube, there are some drawbacks to its use. Both hands being used in closing the mouth and nostrils, it is not easy to make pressure upon the child's chest to insure expiration; moreover, the shape of the tube renders it peculiarly liable to slip out of the larynx, necessitating further maneuvres to replace it. Aspiration by its means could only be imperfectly performed.

Ribemont has perfected this instrument of Chaussier and Depaul, and produced a tube which is well adapted by its form and dimensions to the canal for which it is destined. It is divided into three parts, the laryngeal, buccal, and extra-buccal. The first of these is cone-shaped, with the base above, and ends in a rounded knob, above which is an opening for the air.

The buccal portion is at right angles to the preceding; it is shaped to correspond with the palatine arch, against which it presses, and has a depression to receive the alveolar process of the superior maxilla.

The third portion is simply a straight tube with an opening

for the physician's lips.

The child, wrapped in warm cloths, is placed upon a pillow on a table, the head thrown backward. The left index finger is introduced into the pharynx and placed upon the projections of the arytenoid cartilages, which are more easily recognized than the flaceid epiglottis; the tube is then taken in the right hand, its laryngeal extremity slipped along the radial border of the index finger and just in beyond the last phalanx, and finally into the glottis. With one hand the tube may now be held in place, the depression for the alveolar process of the upper jaw preventing it from slipping forward. With the other hand pressure is made upon the chest. If the air does not freely enter the lungs, aspiration must be resorted to. Thanks to the cone shape of the instrument, the glottis is so effectually oc-

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cluded that we may be sure that the mucus will be drawn out directly from the larynx, trachea, and bronchi, instead of from the month. Aspiration may be repeated, if necessary, and then

insufflation practised.

Ribemont used in connection with this instrument a rubber bulb, because he believed that air introduced from the operator's lungs was less pure than desirable, and that direct insufflation might, by overdistention of the pulmonary alveoli, cause their rupture and produce emphysema. Budin thinks the first objection of no importance, and the fear of emphysema misplaced, the lungs of the child being extremely resistant, as proved by a number of experiments upon the lungs of still-born children.

Ribemont's instrument he considers excellent because of the facility with which it may be introduced and held in place, and the certainty of the removal of mucus from the trachea and lungs. The objection has been made that insufflation by means of an instrument is a veritable operation, and occasionally a difficult one. Budin does not believe that it is ever difficult in the case of infants who have reached term, although in a sevenmenths child the size of the tube might prove an obstacle. It is, however, easy to have tubes made of a smaller calibre. Aspiration, however, must precede insufflation. The author quotes several cases to prove that plugs of mucus frequently adhere tenaciously to the trachea, and can be dislodged by strong aspiration only. Sometimes their mere removal initiates inspiratory efforts on the part of the child; more often it will have to be followed by insufflation.

ITEM.

The nineteenth annual meeting of the American Gynecolo-GICAL Society will be held in Washington, beginning Tuesday, May 29th. The morning sessions of the first two days will be devoted to the discussion of the following subjects: 1. Extirpation of the uterus in disease of the adnexa. 2. The management of face presentations. 3. Rupture of the uterus; surgical vs. expectant treatment. The afternoon of the third day will be devoted to a special discussion before the Congress, under the direction of the American Gynecological Society. The following topic has been assigned: The Conservative Surgery of the Female Pelvic Organs. Referee, Dr. William M. Polk; coreferee, Dr. William Goodell. Since there will be time for only twelve or fifteen papers in addition to the above discussions, those gentlemen who desire to contribute are requested to send the titles of their papers to the secretary on or before April 1st, as he will be compelled to limit the number to the first fifteen which he receives.

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ORIGINAL COMMUNICATIONS.

NOTE ON OLIGOHYDRAMNION.1

BΥ

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(With five illustrations.)

OLIGOHYDRAMNION means deficiency of liquor amnii. The term covers all variations in quantity of liquor amnii from one thousand grammes (about one quart) downward to a few grammes of thick, gelatinous fluid. As compared with hydramnion, the anomaly is rare; at least the number of recorded cases is limited. There is reason to believe, however, that oligohydramnion often escapes observation, and still oftener exact description.

In this note I beg (I.) to describe a typical example of the anomaly; (II.) to review briefly some of the recent literature of the subject; and (III.) to point out its scientific and clinical import. I am indebted to Dr. A. E. Froem, of this city, for the specimen and the clinical history of the case. It is to be

¹ Read before the Chicago Gynecological Society, January 19th, 1894.

regretted that the placenta, membranes, and cord were not critically examined.

I. Observation. *History*.—IVpara; 32 years old; born in New England of American parents; married; five feet eight inches in height, one hundred and forty pounds in weight. The patient was a capable, intelligent woman. She had three living children, aged respectively 13, 10, and 5 years; no miscarriages.

During the first half of this her fourth pregnancy the woman was obliged to work hard in attendance upon her husband, who was sick with typhoid fever. During this period the cellar of her house was filled with water. Dr. Froom first saw the patient at 7 o'clock in the evening of February 15th, 1893. Dr. Froom saw the woman within thirty minutes after pains began. He found her in labor, as she alleged, at term. The uterine tumor, however, was notably small. The cervix was effaced and the os externum dilated to the size of a dollar. The child presented by the complete breech, in the first position (S. L. A.). The bag of waters was intact, and there was no soiling of the sheets nor of the woman's night gown, either by blood or any other fluid.

Labor progressed normally, and at half-past 8 o'clock the same evening the woman gave spontaneous birth to the subject of this note. No liquor amnii whatever escaped during or after the labor. Dr. Froom speaks positively on this point, and he was in a position to observe, as he was present with the woman very soon after the beginning of labor up to its termination. The scanty and tough amnion was folded closely around the body, and required incision in order to permit the escape of the fetus.

The child lived one hour after birth. It was covered thickly with vernix caseosa and a thick, viscid, gelatinous substance.

The placenta separated quickly, and was easily expelled by gentle friction of the fundus uteri.

The loss of blood during the labor did not exceed two fluid-ounces.

The placenta and chorion, on examination, showed no anomaly. The amnion, separated from the chorion, was uncommonly scanty and tough. It was intact, except for the cut made by Dr. Froom to release the child. It contained one fluidounce of thick, viscid, gelatinous substance like that that covered the child's body, but absolutely not a drop of liquor amnii.

The puerperium was normal.

The woman, accustomed to observe details, alleged that no unusual discharge from the vagina occurred at any time during her pregnancy, nor during the brief half-hour that elapsed between the beginning of her labor and Dr. Froom's arrival.

The woman's testimony and Dr. Froom's observation constitute competent evidence, adequate to prove that no liquor amnii

escaped, either during pregnancy or labor.

Dr. Froom gave me the specimen on the morning following the labor. I examined it, had it photographed, and showed it before this Society not quite one year ago. Dr. Ludwig Hektoen dissected the fetus and wrote the appended report:

EXAMINATION OF NEW-BORN MALE CHILD, FEBRUARY 1814, 1893, AT REQUEST OF DR. JAGGARD.

External Examination.—Weight 3,100 grammes, length 50 centimetres. Umbilicus 3 centimetres below centre of body. General external signs of full development at term, except there is no anal orifice whatsoever, and in the perineum there are no indications pointing to anus; the scrotal pouch is quite large, but does not contain any testicles; the penis measures 7 centimetres from triangular ligament to end of foreskin, which is 3 centimetres long without being put on stretch; there is a minute orifice at end of foreskin, into which small probe can be inserted and passed for some distance without entering urethra proper; the glans penis cannot be made to protrude through contracted foreskin. The lower extremities are everted; motion at knee is proper, but extremities remain completely everted on account of some change in hip joints, which cannot be made out definitely externally, although the femoral heads roll around freely over dorsal surfaces of ilium. The body is quite well nourished and well preserved. The umbilical cord is ligated 6 centimetres from navel, cut squarely across, and it does not show any signs of separation.

Internal Examination.—Incision made from chin to pubes. Abdomen empty as to fluid; peritoneum smooth and shining; pelvis occupied by white, tumor-like growth, to which reference will be made more fully later on. Diaphragm reaches third left and fourth right rib. Pleural cavities empty. Lungs collapsed, lying in posterior part of cavities, dark red externally. Thymus large, divided into two equal lateral halves which are united

above. Underneath skin, above upper end of sternum, quite a clot is found extending in median line upward 3 centimetres; there are also extravasations along the course of the large vessels in the left side of the neck. The left sterno-cleido-mastoid muscle is completely absent, while that on the right side is well developed. The pericardium contains 8 cubic centimetres of clear fluid; the vessels over the anterior surface of the heart are distended with blood, and this is also the case with those over the commencement of the aorta. Along the distended vessels are ecchymoses in considerable number, and the largest 3 millimetres in diameter. There are ecchymoses over posterior surface of pericardium as well. The heart weighs 18 grammes. The wall of the right ventricle is 3 millimetres in thickness,



Fig. 1.—Attitude of the fetus when born.

and the cavity is 3 centimetres in depth; the left ventricle is 3 millimetres in thickness, and the cavity is 3.5 centimetres in depth. The endocardium is normal; myocardium is normal; foramen ovale shows oval opening 1 centimetre in longest diameter. Lungs weigh, the right 10, the left 9 grammes; solid; red; contain no air; sink in water; division into customary lobes only incomplete. Thymus weighs 17 grammes. Thyroid weighs 4 grammes.

Abdomen.—The urinary bladder is replaced by a large tumor reaching umbilicus, the peritoneum being continuous over it on all sides; the mass is irregularly oval, with rounded nodules here and there; the dimensions are $10 \times 5 \times 5$ centimetres in the various directions; palpation gives impression of hollow mass with thick, unyielding walls, and incision gives vent to 23 cubic

centimetres of limpid, colorless fluid. The relations of this mass to the surrounding structures are the following:

The hypogastrics run as follows: the right passes in front of the mass to its usual connection with the internal iliac; it is large and shows no changes; the left is much shorter and much smaller. The large intestine appears to terminate at the upper left-hand corner. The right testicle, lying free behind the peritoneum, is connected with the mass by means of a slender, cord-like structure at about the same point; the left testicle is connected by

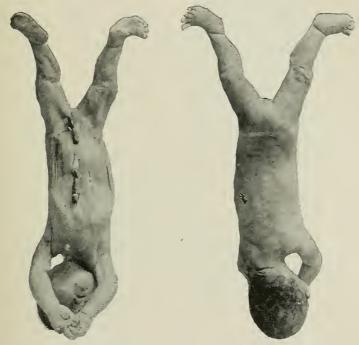


Fig. 2.-Anterior view on suspension.

Fig. 3.—Posterior view on suspension.

means of a similar cord at the middle of left aspect, it lying in the inguinal canal. The right kidney, found lying against lumbar part of spinal column, is connected with the mass by a fibrous structure 3 centimetres long and about 2 millimetres in diameter at its thickest point, nearest mass, which it joins between intestine and left spermatic cord; the left kidney cannot be found, nor can the left ureter be discovered. There is no rectum. Probe passed through urethra is arrested permanently at triangular ligament. The mass on removal is found to be

connected with urethra, and on incision along superior margin is disclosed a large cavity lined with membrane, much like the interior of a hypertrophied bladder, with interlacing trabeculæ and small sacculations, corresponding to external nodules, the wall over which is quite thin. In the thickest parts the wall is 4 or 5 millimetres thick, and very firm and quite dense. In the

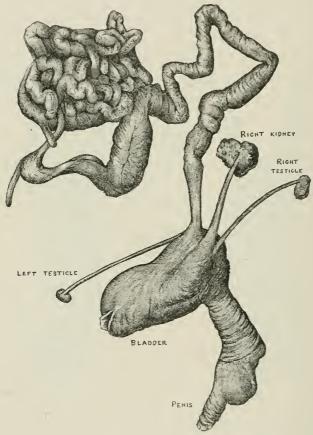


Fig. 4.—Drawing of the genito-urinary apparatus and intestines.

region of the insertion of the ureter and cords, as well as the large intestine, are three openings, one, evidently corresponding to the urethra, leading into canal along which probe passes to same obstruction that it encounters when passed from the free end of urethra; a second opening corresponds to ureter, into which probe passes readily until it meets with obstruction 2 centimetres from bladder; third opening leads into blind canal,

2 centimetres long about, running downward in wall of bladder; arrangement of openings to each other suggests normal trigone, etc.; there is nothing out of the way about orifices except the one leading into blind canal, which is surmounted by little fleshy nodules. There is no opening into intestine from bladder.

The only kidney is a flattened, triangular-shaped bit of tissue composed of thin-walled cystic spaces, each as large as a small

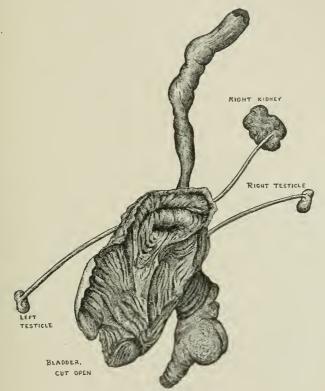


Fig. 5.-Bladder cut open.

pea; it weighs 2.5 grammes; its diameter at greatest point is 3 centimetres. Ureter departs from the centre of anterior surface. Two vessels leave it—one passes to aorta, one to vena cava.

Suprarenal capsules occupy usual places, are large and massive, weigh each 5.5 grammes, and have a circular, flattened shape.

The liver: 13 (left $6 + \text{right } 7) \times 8 \times 2$; negative. Gall bladder and ducts negative also. Spleen $5 \times 2\frac{1}{2} \times 1$; weighs $7\frac{1}{2}$ grammes; is negative on cut surface.

Stomach is filled with glairy, whitish, viscid mucus, dense.

Small intestine normal. Cecum lies just below pyloric end of stomach—i.e., just to right of median line—higher up than usual; immediately below it intestine becomes dilated and filled with black, semi-solid meconium (if intestine is cut across, meconium remains in intestine, does not run out); distention continuous down to junction of intestine with bladder at point described; probe passed in can discover no orifice from intestine to bladder. Dilatation of intestine varies much from place to place; sometimes large, pendulous, distended loops are formed. Aorta, vena cava, and umbilical vein negative. Brain and spinal cord negative. Centre of ossification in lower femoral epiphyses 3 millimetres in diameter. Both hip joints show following: acetabular cavities too small to contain heads of femurs; ligamentum teres of left is 1.5 centimetres long, and is ribbonlike, 3 millimetres wide, and very thin.

The accompanying drawings were made by a draughtsman in my employ from Dr. Hektoen's dissections.

The items in Dr. Hektoen's report that I wish to emphasize are:

- 1. An enormously hypertrophied urinary bladder, containing 23 centimetres of a limpid, colorless fluid; a cystic right kidney; and an urethra absolutely obstructed at the triangular ligament. The left kidney and ureter are absent. The fluid in the urinary bladder unfortunately was not examined chemically.
- 2. Absence of the rectum, and imperforate anus. Rudolf Frank's¹ hypothesis on the atresia of the rectum differs radically from older views, and is pertinent to the case in hand. Atresia ani and all forms of congenital occlusion of the rectum are due, not to arrest of development, but to the subsequent growing together of the tissues after the cloaca is formed and opened outward, especially at the time of the formation of the perineum—third and fourth months. These abnormal adhesions are to be regarded as excessive advances of the normal processes of growing together. The internal and external fistular formations that accompany atresia ani are to be explained by the failure of the obliteration of embryonal canals and furrows that normally grow together. All these anomalies are simply modifications of normal growth processes.

^{1 &}quot;Ueber die angeborene Verschliessung des Mastdarmes und die begleitenden inneren und äusseren angebornen Fistelbildungen." Wien, Josef Safar. 1892.

- 3. Congenital luxation of the heads of both femurs. Typical talipes varus of both feet; that is, both feet are extended, with inversion and rotation of the anterior parts.
- 4. Complete absence of the left sterno-cleido-mastoid muscle, while the right is well developed. Dr. Louis J. Mitchell writes to me as follows on anomalies of this muscle: "The most common anomalies of the sterno-cleido-mastoid are those in which the sternal or clavicular heads are absent, or fused together, or else an additional head is found (cleido-occipitalis). Complete absence is quite rare. I know of but one case, reported by Kappele; I am unable to give you the exact reference."

II. LITERATURE.—Lasarewitsch² describes a case in the following words: "In the year 1861 I was in Kiew in attendance upon the wife of Captain Tsch. Out of her twelve previous labors, eight were entirely dry (without any liquor amnii), according to the words of the parturient woman. During her labor with the thirteenth child I was astonished at the entire absence of liquor amnii. The labor lasted twelve hours; the child was mature, normally developed, and was thickly covered with vernix caseosa."

Lomer's records an example of absolute oligohydramnion in a II para, 32 years old, at term, in which the child, although normally developed and alive, weighed but 2,750 grammes and showed signs of disturbed nutrition. "The child looked as if it suffered from atrophy, like an infant, whose metabolism is disturbed, that suffered from lack of nourishment. The skin was wrinkled, relaxed, could be lifted up in folds; the face had an old expression; the epidermis was somewhat like leather, exfoliated from the entire body in large scales." The child died at the age of 9 months from diarrhea. Syphilis was excluded.

Claude's 'case closely resembles Lomer's. The child, alive, weighed five pounds, looked as if burned by the sun, and its skin was like leather. Like these also is Lente's case: Multipara; child very weak, pale as if from hemorrhage. The child, after resuscitation, died in convulsions.

¹ Prof. Macalister, Transactions of the Royal Irish Academy, 1872.

² Lehrbuch der Geburtshülfe, 1879, Bd. ii., p. 426 (Russian).

³ Centralbl. f. Gyn., 1887, No. 34.

⁴ Oesterr. med. Jahrb, Bd. xx., Stück 3; Schmidt's Jahrb., Bd. xxviii., p. 189. Referred to by Lomer, loc. cit.

⁵ Schmidt's Jahrb., No. 171, p. 47; American Journal of the Medical Sciences, exli., p. 125.

Mekerttschiantz' reports an example of oligohydramnion that recurred in three successive pregnancies. The woman, 24 years old, aborted in the sixth month, February, 1882. (1) January 18th, 1883, abortion in the sixth month; no liquor amnii; the fetus not developed in a degree corresponding to its age; died. (2) March 26th, 1884, abortion in the sixth month; no liquor amnii; dead female fetus, not developed in a degree corresponding with its age. (3) December 7th, 1884, end of the sixth month; no liquor amnii; dead female child, relatively undeveloped.

Linck ² records an interesting case of abnormal fragility of the fetal bones, shown by numerous recent and old fractures of the elavicles, ribs, and of the bones of the extremities. Rachitis and syphilis were excluded. Linck refers the anomaly to the following factors: (1) a too greatly compressed attitude of the fetus in utero on account of insufficient liquor amnii; (2) spontaneous fetal movements; (3) a peculiar fragility of the bones not referable to syphilis nor to rachitis.

O. A. Peters * refers a monstrosity to oligohydramnion. The labor was an example of partus precipitatus. The fetus, born with a caul, presented by the vertex, with the lower extremities flexed firmly on the abdomen. The quantity of liquor amnii was very small. The fetus weighed 2.3 kilogrammes and measured 44 centimetres. The head and lower extremities were malformed. The head was hindered in growth and compressed from the forehead downward to the basis cranii.

In the lower extremities the following items were observed:
(1) Both lower extremities, after birth, persisted in firm flexion on the belly. When this attitude was forcibly altered the legs immediately returned to the extraordinary flexion. The flexors were not tense in this attitude, so that they must have been shortened. In the right hip joint the thigh was strongly rotated outward. (2) The right knee joint was normal; left, genu recurvatum. Flexion of the knees was not possible, only hyperextension to 90°. The left patella was in normal position.
(3) Right, pes calcaneus with slight varus; left, pes calcaneus with slight valgus.

¹ Mekerttschiantz, "Mangel von Fruchtwasser," Centralbl. f. Gyn., No. 51, 1887.

² Linck, "Ein Fall von Zahlreichen intra-uterinen Knochenbrüchen," Archiv f. Gyn., Bd. xxx., Hft. 2.

³ Nederl. tijdschr. v. Geneeskunde, 1890, Deel. i., No. 16; Centralbl. f. Gyn., No. 2, p. 56, 1891.

Reichel' demonstrated before the Berlin Society for Obstetrics and Gynecology, January 14th, 1887, a monstrosity associated with entire absence of liquor amnii. The chin is firmly flexed on the sternum. The skin on the anterior aspect of the neck, between chin and thorax, is greatly shortened and does not allow extension of the chin. The nasal bones are flattened. The arms and forearms are shortened and bent; the hands are clubbed. The lower extremities are short and rotated outward; this supination affects both the thighs and legs. Both feet are clubbed. The skin over the anterior aspects of both hip joints and over the inner and posterior aspects of the ankle joints is extremely shortened. In a word, the attitude of the fetus is such as to make one think that an abnormal pressure from the uterus influenced the development of the fetus.

The fetus was born four weeks before term.

During the labor absolutely no liquor amnii escaped. The patient alleges that eight weeks before labor the bag of waters broke.

In the discussion Reichel, Ebell, Schröder, assuming that the watery discharge escaped from the uterus, and not from the urinary bladder, were inclined to account for the phenomenon on the hypothesis of hydrorrhea gravidarum. A similar construction is placed on this case by Mekerttschiantz.²

Arthur E. Giles reports a case of "Malformation of rectum and bladder, congenital absence of both kidneys and ureters, imperforate anus, absence of right hypogastric artery, and deformed feet," before the London Obstetrical Society. In answer to an inquiry by Leith Napier as to the presence of hydramnion, Giles said he could obtain no history of the pregnancy or labor from the midwife. He remarked further that, according to Bonn, complete absence of kidneys and ureters is rare.

The last two cases that I beg to quote possess a very particular interest.

- P. Strassmann bresented to the Berlin Obstetrical and Gynecological Society, November 10th, 1893, two examples of absence of the liquor amnii that belong to the same group as the case described this evening:
 - 1. Ipara, 20 years old. Last menstruation in March. Passed

¹ Centralbl. f. Gyn., No. 7, 1887.

² Centralbl. f. Gyn., No. 51, p. 834, 1887.

³ Transactions of the London Obstetrical Society, vol. xxxiv., 1892, p. 129.

⁴ Zeitschrift f. Physiol.

⁵ Zeitschrift f. Geburts. u. Gynäk., Bd. xxviii., Heft 1, p. 181, 1894.

through her pregnancy without event up to the eighth month. November 3d, 1893, 10 o'clock A.M., dolores presagientes. November 4th, 4 o'clock P.M., in the presence of a midwife, the patient gave birth, in vertex presentation, to a fetus that died after a few respirations. No liquor amnii escaped before, during, nor after labor, and the bed showed nothing but a small quantity of blood. The placenta and cord were not examined, although the midwife said the cord was inserted into the membranes—insertio velamentosa. The fetus, male, weighed 1,550 grammes and corresponded to the eighth month. Both feet were supinated in the highest degree, so that the region of the external malleolus was the most prominent region. The big toe of the right foot was extremely abducted, so that it formed nearly a right angle with the second toe. The glans penis was free and blue-black, the prepuce swollen and edematous, so that a paraphimosis was apparent. At the junction of the scrotum with the penis there was a furrow marking the boundary of the edema. The right foot lay against the scrotum in such a way that the penis was grasped between the big and second toes, while the left foot lay on top.

In consequence of the absence of liquor amnii, which caused the club-feet, the penis, caught between the toes, had been strangulated by the uterine contractions of labor. Both kidneys were absent. On the left side the suprarenal capsule was absent; on the right a small one, 5 millimetres long, was present. Both ureters were absent. The bladder contained a little mucus. The left ureteral orifice was obliterated; the right one was present but impervious. The testicles were in the small pelvis.

2. Strassmann encountered the second example at the Charité in a case of extraction. There were many malformations—polydactylia manuum et pedum, encephalocele, double club-foot.

III. Scientific and Clinical Import.—1. Oligohydramnion in the earliest period of embryonal development implies a contracted amnion. When the amnion is contracted it presses the surface of the fetus and profoundly affects its development. When the tail fold of the amnion is contracted, phocomelius, symmelius, and sirenomelius are produced; cyclopus, cyclocephalus, trigonocephalus, when the head fold is involved.

2. At a later time, but still within the first embryonal months, oligohydramnion is the chief factor in the determination of the

feto-amniotic bands described by Simonart and others. Gustav Braun was the first observer to refer these bands to anomalies of growth and not to inflammation. Braun clearly recognized two factors: (1) a relatively rapid growth of the amnion, leading to foldings into the cavity of the ovum; and (2) a deficiency of liquor amnii, permissive of the foldings, and allowing contact and union with the surface of the fetus. In general, two groups of developmental anomalies are caused by feto-amniotic bands and adhesions: (1) fissure formations, and (2) strangulations. Harelip, cleft palate, hernia of the umbilical cord, cranioschisis, rhachisschisis, are examples of fissure formations. Spontaneous amputation of one or all of the upper or lower extremities is an example of the highest degree of strangulation.

3. When the liquor amnii is deficient at a still later period, after relative development of the fetal body, anomalies from pressure of the uterine walls occur. Under normal conditions the fetus is covered by a protective layer of liquor amnii, and its surface is everywhere under the same pressure—"general intra-uterine pressure." According to Schatz this pressure is very low in the pregnant uterus. The average tension is only five millimetres of mercury. If this protective envelope of liquor amnii is deficient or absent, the surface of the fetal body comes into direct contact with the walls of the uterus and the pressure becomes unequal. At the same time portions or all of the fetal body are fixed in one and the same attitude for a longer or shorter time. This fixation affects the direction and degree of growth of the portions immobilized. In this way, as pointed out by Otto Küstner, the pressure by the nterus directly deforms the fetus. The fect and ankle joints offer a slight resistance to this deforming pressure, ascompared with other portions of the fetal body, and club-foot results. Küstner has shown that the effect of oligohydramnion in the determination of club-foot is greater than is generally believed by surgeons. Out of 150 cases of minimum liquor amnii, he has collected 13 (8.6 per cent) infants, otherwise well formed, whose feet showed this effect of uterine pressure. Deformities of the hands from pressure occur, but they are less common than club-foot.

If the entire body is compressed the force is transmitted to the spinal column. The spinal column, however, is well protected by its firm structure, and by the fact that an increase in

¹ Müller's Handbuch der Geburtshülfe, Bd. ii., Heft 2, 1889.

its kyphotic curvature permits the force to be dissipated. If the pressure be applied laterally, no adequate resistance is offered and the fetus remains fixed in a lateral flexion, as in the case described by Fritsch.

Other regions and joints may be affected. The fixed attitude of the pelvic extremity in my case indicates that the fetus was immobilized in this posture for some period of time. The same pressure also explains the luxation of the femoral heads, and, without violence to the theory, I am of the opinion that it can be invoked to explain, in part at least, both the atresia ani and the urethral obstruction.

5. Strassmann's two cases, already quoted, and the example described in this note, indicate that absence or destruction of the fetal kidneys and oligohydramnion are not accidental coincidences. I have been unable to find reliable accounts in other recorded cases either of the state of the kidneys in oligohydramnion or of the quantity of liquor amnii in cases of absent or defective kidneys. These three cases, however, in the absence of evidence to the contrary, suffice to establish the presumption that oligohydramnion, later in pregnancy when the fetal body is relatively well developed, is caused by absent or defective fetal kidneys or by obstruction to the flow of urine through the excretory ducts. The hypertrophied kidneys in the hydramnion of uniovular twins, the highest degree of excess of liquor amnii, lends probability to this view.

The behavior of the kidneys, both in deficiency and in excess of liquor amnii, strongly corroborates Gusserow's theory that normally the liquor amnii is derived in a large degree from the fetal kidneys.

Minot, in his "Human Embryology," writes on the origin of the liquor amnii as follows: "It is a hypothesis of long standing that the liquor amnii is an excretion of the fetus, and opinion has inclined to regard it as the product of the fetal urinary apparatus. There is, however, no satisfactory argument of any kind in favor of this view, but, on the contrary, there are many forcible objections to it, and, moreover, there is strong evidence to show that it is derived from the mother by direct transulation." In the presence of the evidence indicated in this note, I venture the opinion that this paragraph needs revision.

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William Wood & Company, New York, 1892, p. 340.

ACUTE PUERPERAL CELLULITIS AND TRUE PELVIC ABSCESS.

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It is my purpose in this communication to report my experience with acute puerperal cellulitis and true pelvic abscess, collecting together in one paper the various cases which I have reported from time to time. The time has now come when such a communication will be received in a proper spirit—that is, as a report of conditions carefully observed at the bedside, and therefore as a contribution to scientific medicine. The first whirl of excitement which followed the discovery of the real nature of chronic pelvic inflammatory troubles has passed by. Men are no longer blinded by the prejudices of the era when all pelvic inflammation was regarded as cellulitis. A sufficient time has now elapsed to enable them to recover from the reactionary wave, during the height of which it was believed that all pelvic inflammation was necessarily tubal in origin. Practitioners of medicine are very prone to be ruled by the dogmas of a few leaders in professional thought, and gynecologists are no exception to this rule. During two generations they gave implicit adherence to the dogma of Nonat, Churchill, and Emmet, and during the present generation no less implicit adherence to that of Tait and his disciples. It is now time to accept all the facts in the case, whether or not they agree with prevailing theories.

Case I.—This patient I saw operated upon, May 8th, 1888, by Dr. D. Longaker, who gave me the following history: Mrs. F., aged 26, III para. She was delivered of the third child seven weeks ago by a natural and easy labor. On the fifth day she had a chill, and chills and fever continued thereafter, also great pain. Dr. Longaker saw her seven weeks after labor, and operated for a clearly defined mass situated mostly in the left side of the pelvis, rising up above the brim of the pelvis and extending from the symphysis pubis to the iliac crest. An exploratory celiotomy showed that both uterine appendages were of normal size, but were somewhat fixed by recent adhe-

sions. "Neither right nor left ovary nor tube formed any part of the mass; these structures could be distinctly outlined apart from it." Fluctuation was distinct in the swelling, as made out by the intra-abdominal finger. A second incision was made above Poupart's ligament, and about half a pint of pus was discharged. The pus cavity was located in the left broad ligament, and extended between the uterus and bladder into the right broad ligament. The patient made a good recovery, but has borne no children since; this is probably because effectual means were taken thereafter to prevent conception.

Case II.—This patient was seen at the Philadelphia Lying-in Charity during my service there as senior assistant physician. I am unable to find any published notes of the ease. My recollection of its salient points is very clear and distinct. This patient was infected after labor, and after a number of days presented the usual evidences of suppuration, together with the signs of intense inflammation in the right side of the pelvis and in the right inguinal region. A hard mass of exudate formed in the right groin, which could be distinctly outlined by palpation. There was every evidence that this was a case of true pelvic abscess, but, influenced by the teaching that all pelvic suppuration is intraperitoneal, an abdominal section was made by Dr. Charles Meigs Wilson, assisted by myself. The uterine appendages were carefully examined, and it was evident that the pus accumulation was entirely distinct from them and that it was external to the peritoneum. The abdominal incision was closed and the pus let out by an incision made above Poupart's ligament near the anterior superior spine of the ilium. patient made an uninterrupted and quick recovery.

Case III.—This case I saw in consultation with Dr. Himmel-wright, March 2d, 1890. The history, as given to me by Dr. Himmelwright, is as follows: The patient had a miscarriage, January 3d, in the second month of pregnancy. One week later symptoms of pelvic inflammation appeared, and a diagnosis of peritonitis was made. The patient got about by February 1st. After a week pain was felt in the right inguinal region, and gradually increased in intensity, extending to the lumbar region. After another week (February 15th) she was unable to walk erect and to put her foot firmly on the ground, but had to stoop forward. During this time the temperature remained normal and there were no chills. At times the pulse was slightly

accelerated. The pain continued to increase, and on February 27th a swelling was noticed in the right lumbar region. March 1st the temperature rose to 101° F. and the pulse to 120, and there were slight chills. March 2d I saw her. The temperature was normal, the pulse about 90. The right inguinal region was tender, suggesting, indeed, appendicitis, but there were no symptoms to warrant the supposition. A semi-fluctuant swelling was found in the right lumbar region. The next day this swelling had increased, and a hard mass was felt in the right inguinal region, extending as high as the ribs. The swelling in the lumbar region was opened, and two or three pints of pus escaped. Introducing my index finger, it passed around the ilium into the iliac fossa. A rubber drainage tube was introduced and irrigated daily with a dilute solution of peroxide of hydrogen. This discharge gradually decreased and the tract rapidly healed, closing from the bottom.

It may be asked, "Why do I claim this as a case of true pelvic abscess?" The abscess was undoubtedly situated in the false pelvis, on the right side. I had my finger in it. The entire absence of bowel symptoms excludes perityphlitis. The fact that, on examination, the uterns was found movable and the broad ligaments free from exudate (no fixation of the appendages), excludes pyosalpinx. Hence, I take it, the abscess was due to the breaking down of an infected pelvic gland situated behind the peritoneum, in the right iliac region.

Case IV.—This case was in every way similar to the first. I saw the patient, in consultation with Dr. Langrehr, five weeks

after labor.

The perineum had been torn and was sutured some hours after labor. Septic infection occurred, and for three weeks the temperature ranged between 100° F. and 103° F. During this time there was no pain or distention of the abdomen, or tenderness of the uterine appendages, on examination. The perineal wound became inflamed, however, and the stitches were removed. During the fourth week all the symptoms abated. At the beginning of the fifth week the fever increased and tenderness in the left inguinal region became marked. Purulent matter had been discharged per vaginam, but whether or not it came from the abscess which had formed was questionable. On examining the patient five weeks after labor I found her much depressed, in a typhoid condition, with a swelling above the

pubes and to the left. Under chloroform a mass of exudate was felt in the left broad ligament, extending between the uterus and the bladder, and plainly palpable above the pubes. My diagnosis was true pelvic abscess. I advised median section for an absolute exclusion of complicating pyosalpinx; then a second incision parallel with Poupart's ligament, to evacuate the abscess. This was done by Dr. Langrehr on the following day. The uterus, ovaries, and tubes were found healthy. The omentum was in places densely adherent. The abscess was situated within the broad ligament and extended upward behind and two inches above the ramus of the pubes. It contained about six ounces of thick pus, which was evacuated by an incision in the left inguinal region directly above Poupart's ligament. The ultimate recovery was perfect.

Case V.—Mrs. G., aged 30, Hpara, was delivered, January 18th, 1893, of a living child, after a normal labor. The placenta was delivered by the introduction of the hand. The following day Mrs. G. had a temperature of 104° F. and was suffering much from pain in the right groin and from tympany. On the night of the 20th I saw her in consultation. The temperature was 103° F., the pulse 110, and there was marked tympany and much tenderness in the right groin. A striking feature in the case was that, although the bowels were very much distended, the abdominal wall itself was not very tense. The coils of distended bowels could be very plainly observed through the abdominal wall. The bowels had not been moved for four or five days. The patient was put upon quinine, strychnia, and digitalis, and the bowels were freely moved. Vaginal and intrauterine douches of corrosive sublimate were employed, although the lochial flow was not foul-smelling. The patient's condition remained very much the same until the seventh day, when the right broad ligament became infiltrated, so much so as to be plainly palpable above the brim of the pelvis in the right groin, while from below the anterior and right quarter of the pelvis was filled with exudate closely attached to the pelvic wall and displacing the cervix backward into the hollow of the sacrum. This exudate began to disappear about the fourteenth day, and was absorbed very rapidly. Convalescence was further inter-

¹ The first four cases have been reported in the Medical News of August 29th, 1891.

² Annals of Gynecology and Pediatry, June, 1893.

rupted by a nephritis, possibly of septic origin, and also by severe intestinal pain accompanied by diarrhea, presumably due to inflammation of the large bowel. This patient was seen in consultation by Drs. Goodell and Parish. She eventually made a good recovery.

Case VI.—Mrs. H., aged 28, IIpara, was delivered of her second child in March, 1891, the labor being conducted by a midwife. She was infected and was extremely ill. I saw her with Dr. Leopold five weeks after the labor. At that time she was prostrated, with a rapid pulse, "leaky" skin, chills, irregular temperature—in fact, the classical symptoms of septic intoxication.

On examination the right broad ligament was found indurated and a mass of exudate extending on the right side of the abdomen almost as high as the umbilicus. From the extent of the mass it was supposed that a right pyosalpinx with an intraperitoneal abscess existed; but in view of the puerperal history and the existence of a cervical laceration, the possibility of a true pelvic abscess was discussed. A median abdominal incision was made April 16th, and the abdominal viscera in the lower right quarter of the abdomen were found fused by adhesions. The patient took ether so badly, becoming cyanosed while still partly conscious, and the pulse was so weak, that I and the gentlemen present were convinced that to attempt the separation of the adhesions and the evacuation of the pus from above would result in her death on the table from ether. An unsuccessful attempt was made to reach the pus by an incision made near the anterior superior spine of the ilium without giving more ether. The exploration was not pushed, owing to the patient's bad condition. The patient was then put to bed, and improved for some days. Operation was again proposed, and chloroform selected as the anesthetic, which produced as much cyanosis as ether had done. An incision was now made directly over the broad ligament, the uterus was located, and the index finger was forced into the broad ligament, evacuating several ounces of pus. With rubber drainage a satisfactory convalescence followed.

October 27th, 1892, I operated on Mrs. H. to cure a ventral hernia which had formed at the site of the third incision. On opening the abdomen I was surprised to find that the adhesions throughout the right side of the abdomen, which had been uni-

versal eighteen months before, had disappeared, except a point of adhesion between the omentum and hernial sac, and another between the omentum and broad ligament. Both appendages were perfectly healthy. This fact demonstrates what was believed when the pus was evacuated—namely, that it was not a pyosalpinx, but an abscess of the broad ligament.

The disappearance of the very extensive adhesions in this case is worthy of record as showing that peritoneal adhesions

are not necessarily permanent.

It is of interest to report that during the summer of 1893 this patient was delivered of a living child after a normal labor, and that she is at present in good health.

Case VII.—Mrs. F., aged 18, was confined May 8th, 1893. She had a mild puerperal sepsis and was in bed for two weeks. The following month she was constantly sick, being in and out of bed, suffering with pelvic pain, anorexia, and having more or less fever. (The temperature and pulse I do not know, as I was not in attendance.) She came under my care six weeks after her confinement, and was admitted to the Kensington Hospital for Women. Examination showed a large inflammatory mass in the pelvis, absolutely anchored to the left pelvic wall. She was under observation for two weeks, with the temperature fluctuating between 99° and 102° F., with the general evidences of mild septic absorption, such as anorexia, sweats, chilly sensations, and increased pulse rate.

Believing that pus was present in the pelvis, either in the form of a true pelvic abscess or a pyosalpinx, an abdominal section was made on June 26th, 1893. The following conditions were found: The uterus was fairly well involuted, and was displaced upward and backward by a mass in the left broad ligament. The right broad ligament and the right Fallopian tube and ovary were entirely normal, as was demonstrated not only by touch, but by delivering the ovary and tube through the abdominal incision. The omentum was adherent to the anterior face and upper border of the left broad ligament in front of the Fallopian tube. This adhesion was separated. The left ovary and tube were found to be entirely normal, the mesosalpinx being normal, soft, and movable. This was demonstrated not only by touch but by vision, the woman being in the Trendelenburg posture, so that the entire left side of the pelvis was in

¹ Reported in Annals of Gynecology and Pediatry, June, 1893.

plain view. The left broad ligament was very much infiltrated with inflammatory material, and firmly anchored to the anterior and left bony wall of the pelvis. Fluctuation was not apparent. It was determined to close the abdomen, and, if septic symptoms persisted, to open the broad ligament from below. That portion of the omentum which was adherent to the broad ligament was ligated and cut off. A small gauze drain was placed against the broad ligament where the omentum had been separated, so that should pus make its appearance at this point it would find its way out through the abdominal incision.

The patient's convalescence was uninterrupted; the temperature rapidly dropped to the normal, and her general condition steadily improved. The gauze drain was removed, good union of the abdominal incision was obtained, and the patient was discharged from the hospital at the end of four weeks. In the meantime not only had her general condition very much improved, but the pelvic mass had almost disappeared.

This patient consulted me January 9th, 1894, to ascertain the cause of a suppression of menstruation of three months. I found her to be between three and four months pregnant. A careful examination of the left broad ligament failed to discover any evidence of the former cellulitis, the left broad ligament feeling exactly like the right one.

The evidence of the existence of acute puerperal cellulitis as a primary condition in this case is absolute. There was not even a complicating pelvic peritonitis, in the ordinary sense of that term, merely a point of adhesion between the omentum and the broad ligament, which was, of course, due to a small, circumscribed area of peritonitis. I was able to demonstrate these conditions to a number of physicians who were present, including among others Dr. Fullerton, of the Woman's Hospital.

What I wish especially to insist upon is that in this case neither Fallopian tube was involved in the inflammatory process, that both were entirely normal. The left Fallopian tube and its mesentery were scarcely even congested. The circumscribed area of peritonitis where the omentum was adherent to the broad ligament was plainly due to the fact that the inflammation had extended directly through the broad ligament to the peritoneum, leading to the adhesion of the omentum. That this is possible has been denied by those who maintain that all pelvic inflammation is due to infection which has spread through

the Fallopian tubes. In this case the conditions present were unmistakable.

We thus have seven cases, in all of which, except the third and fifth, an abdominal section was made, so that we have the evidence not only of the usual physical examination, but also that obtained from an intraperitoneal examination. In Cases 1, 2, 4, and 7 the abdomen was opened and the uterine appendages were examined, and it was demonstrated that they were either free from disease, or, at the most, lightly attached by recent adhesions. In these four cases there is not a shadow of doubt that the disease was in the broad ligament, and that it spread to the broad ligament directly from the uterus or vagina by way of the lymphatics.

Case 6 was undoubtedly not a case of pyosalpinx, and I have no question myself that the pus was located in the broad ligament. A carping critic might affirm that, even although it was not a pus tube, the pus was intra- and not extraperitoneal, and that it was due to suppurative peritonitis. My opinion that the pus was in the broad ligament is based upon the fact that the pelvic exudate was anchored to the anterior and right pelvic walls, and that when I cut down upon the mass I recognized the uterus and tore through the broad ligament with my finger in front of the Fallopian tube.

The evidence in Cases 3 and 5 is not so absolute as in the others, and they are included in this list, not for the sake of demonstrating the occurrence of puerperal cellulitis, as is done by the other cases, but because of their relative bearing upon the subject.

The foregoing cases demonstrate several interesting facts with reference to obstetrics and gynecology:

- 1. That in the puerperal state pelvic cellulitis and true pelvic abscess occur as the result of septic inflammation.
- 2. That inflammation may spread from the vagina or uterus along the pelvie lymphatics to the broad ligaments without involving the Fallopian tubes.
- 3. That peritonitis can be set up by the spread of inflammation from the broad ligaments to the peritoneum without involvement of the Fallopian tubes.
- 4. That very extensive pelvic exudate and intraperitoneal adhesions can be absorbed.

It hardly seems worth while to bring evidence to bear in

support of our first proposition, and it would not be called for, were it not that a few men of wide experience maintain the contrary. Being able to present absolute evidence in the shape of carefully and thoroughly observed cases occurring in my own practice, I shall not take the time or trouble to make references to the literature.

What I have said concerning proposition 1 is equally true of proposition 2, which is distinctly proven by certain of the foregoing cases. Case 7 is a beautiful illustration of the fact that a very extensive puerperal cellulitis can be present and yet the Fallopian tubes be entirely healthy. In this case they were scarcely, if at all, congested, and the mesosalpinx was entirely free from infiltration.

The third proposition is likewise proven, especially by Cases 7 and 4. In both of these cases the omentum was adherent to the broad ligament, although the tubes were free from disease. I have no doubt that pelvic peritonitis is usually due to the spread of inflammation from the endometrium through the Fallopian tubes to the peritoneum, but these cases show that this rule is not without exceptions. Numerous other exceptions have come under my observation. For instance, a short time ago I did a hysterectomy for a fibroid tumor, in which the tumor, being impacted in the pelvis, was adherent to the rectum and posterior pelvic wall, over an area of at least nine square inches, and yet in that case the Fallopian tubes were entirely normal. In several cases of appendicitis I have found the peritonitis to extend to the pelvis, the Fallopian tubes having nothing to do with its occurrence. Moreover, it is a well-known fact that when small tumors, especially dermoids, become wedged in the pelvis or become twisted upon their pedicles, peritonitis ensues; likewise, that in cases of malignant disease of the abdominal or pelvic organs adhesions are almost always present. Therefore it must be admitted that pelvic peritonitis can occur independently of salpingitis.

Case 6 demonstrates our fourth proposition. In that case the entire right lower quarter of the abdomen was fused together by recent peritoneal exudate, and light adhesions had formed in the left half of the pelvis; yet, eighteen months later, when the abdomen was reopened, the entire mass of adhesions had been absorbed, with the exception of a small point between the omentum and right broad ligament and another small point between

the omentum and the hernial sac. Owing to the very extensive character of the adhesions in this case, it is a striking example of the fact that recent adhesions can be entirely absorbed.

Two women of the seven whose cases have been detailed in this report have been delivered of living children since their recovery from the attack of acute puerperal pelvic cellulitis. The subsequent history of four of the other five women is unknown to me. The fact that two of these women have borne children is of interest, because of its bearing upon the question of the relation of pelvic exudates to sterility. As this paper has dealt only with demonstrated facts, I shall merely suggest that the occurrence of pregnancy after the existence of extensive exudates forming during the puerperal state, is best explained in many cases by the fact that the condition present is a puerperal cellulitis rather than a diseased tube. It is a severe tax upon my credulity to accept the statement that extensively diseased tubes, more especially pus tubes, can so far recover as to permit the occurrence of pregnancy, and I believe that the true explanation in not a few cases of pregnancy following the recovery from puerperal pelvic inflammation is that the disease was originally in the broad ligament and not in the Fallopian tube.

In conclusion, I wish to say a few words concerning the relative frequency of acute puerperal cellulitis and inflammation of the Fallopian tubes. I believe as firmly as any one that pelvic cellulitis and true pelvic abscess are comparatively rare conditions, and that the usual variety of pelvic inflammation is a salpingo-peritonitis. I have not met with pelvic cellulitis except in the puerperal state, and have no reason to believe that it occurs except as a result of infected wounds of the vagina and perineum. As such conditions are very infrequent, a pelvic cellulitis in the non-puerperal state would be a surgical curiosity.

I have added these remarks lest it might be inferred by the unthinking that I am desirous of supporting the old and abandoned theory of Nonat and Emmet concerning pelvic inflammation. At the same time I am glad to be able to present incontestable proofs of the occasional occurrence of acute puerperal pelvic cellulitis and true pelvic abscess.

2134 HANCOCK STREET.

THE ASEPTIC DRESSING OF THE UMBILICAL STUMP.

ву JOSEPH EVE ALLEN, M.D., Augusta, Ga.

THE dressing of the umbilical stump is a subject that is but briefly mentioned by obstetric writers, and the importance of its proper performance is not fully recognized or the best methods understood by the mass of the profession. Physicians generally regard it as something so trivial as to be altogether unworthy of notice, a service so simple that it can be safely left to the entire care of nurses and old women. Yet this is a matter of the greatest moment, one directly involving the comfort, and sometimes the life, of the new-born infant, and therefore demanding in every detail the closest supervision of the medical attendant. Recent investigations have conclusively proven that when tetanus, erysipelas, diphtheria, and septicemia occur in the young infant, the infecting micro-organisms and ptomaines gain an entrance into the system through the umbilicus. Prof. J. Lewis Smith truly says: "Septic disease of the new-born can in every case be traced to carelessness or the dirty dressing of the cord." When the state of things present at the time of the separation of the funis is considered, it is readily seen that the umbilical fossa offers a perfect culture field for microbes brought to it by unclean dressings, and a ready way for the contamination of the blood. Here, in close contact with delicate, new-formed tissue and loosely stopped blood vessels and lymphatics, is a pultaceous mass of organic material having all the conditions of heat and moisture necessary for germ growth and multiplication; and it is surprising that, with such favoring circumstances, infection does not more frequently take place. The researches of Prof. T. M. Prudden are especially interesting in this connection, explaining, as they do, the relation between infantile septicemia and epidemics of puerperal fever, and showing the necessity of strict asepsis in dealing with the funis stump. In 1888 this distinguished observer made micro-

^{1 &}quot;American System of Obstetrics," vol. ii., p. 728.

scopic examinations of the bodies of infants dying in the wards of the New York Infant Asylum, and reports that in every case bacteria in great numbers were found in the umbilical vein and lymphatics and infiltrating the surrounding tissues. Both the rod-like and spheroidal microbes were present, though the species that was by far the most abundant was the Staphylococcus pyogenes aureus, and in some cases the Streptococcus pyogenes was also identified. The air of the wards was found to be loaded with living bacteria.

The investigations of Nicolaier, Kitasato, Escherich, and others into the pathology of tetanus, demonstrating that trismus nascentium is a traumatic infectious disease of the navel. furnishes a most convincing argument for the aseptic management of the funis, and points out the best way of sterilizing dressings for the purpose. A somewhat extended reference to the results of these researches here is therefore proper. It was shown by Nicolaier, in 1884, that tetanus was a toxemia produced by the absorption of a poisonous ptomaine formed at the seat of the wound by a bacillus whose normal habitat was moist garden soil. Microscopically these bacilli are slender, straight rods, with round ends which grow into long filaments. The spores develop from one of the extremities and are spherical in form, and considerably greater in diameter than the rods themselves, giving the spore-bearing bacilli the shape of a pin (Sternberg).

Brieger, Fränkel, and Kitasato have succeeded in isolating from tetanus cultures a toxalbumin, called prototetanin, which is a ptomaine most deadly in its effects. This is the specific pathogenic element of the disease, for the tetanus bacillus belongs to the anaërobic group of microbes and is incapable of existing for any length of time or of multiplying in the blood of living animals.

Escherich inoculated mice with a bit of tissue taken from near the umbilicus of infants who had died of trismus, and produced typical tetanic convulsions, thus proving beyond doubt the infectious nature of the disease.

The spores of the tetanus bacillus retain their vitality for months in a desiccated state, and are not destroyed by a temperature of 80° C. maintained for an hour, but are killed by a five minutes' exposure to steam at 100° C. They are not destroyed in ten hours by a five-per-cent solution of carbolic acid, but five-

tenths per cent of hydrochloric acid added to this solution kills them in two hours. A 1:1000 bichloride solution destroys them in three hours, or in thirty minutes if five-tenths per cent of hydrochloric acid be added. The tetanus ptomaine (prototetanin) is destroyed by a temperature of 65° C. maintained for five minutes, or 55° C. for an hour and a half. In an oven, at 37° C., it gradually loses its toxic potency. Direct sunlight completely destroys it in eighteen hours, and in diffuse daylight its poisonous properties are gradually lost. In a cool, dark place it retains its original potency indefinitely. In general it is destroyed by acids and alkalies.

The knowledge gained of the etiology of tetanus through the labors of these pathologists is among the most beneficial to mankind of the many advances in practical medicine growing out of late discoveries in bacteriology, for it places in the hands of the physician of to-day a means of prophylaxis as sure and certain as is vaccination for small-pox.

In order to rightly apply the principles of aseptic surgery to the dressing of the umbilical stump, it is necessary to keep in view and follow what physiologically is the process of its separation. This is not, as many suppose, a process of putrefaction, or, as Bouchat asserts, one of suppuration and ulceration, but is normally a desiccation or drying. The water in the Whartonian jelly evaporates or becomes absorbed, the cord shrinks, and at the place of union with the abdomen the integument contracts into a radiating depression, which, when the cord falls, forms a dry, firm cicatrix. Whenever putrefaction, suppuration, or ulceration appears, it is positive proof that the dressing has not been aseptic. The dressing that keeps out microbic and other infection, and at the same time hastens desiccation, is the one that is best adapted for the purpose. The following is the method that in the experience of the writer has yielded the most uniformly satisfactory results:

1. The cord is secured by a clamp or ligature, and divided about two inches and a half from the abdomen. The child is then turned over to the nurse to be washed. The vernix caseosa should be thoroughly removed, and to do this properly the child must be rubbed with pure olive oil and then washed with warm boiled water and pure white castile soap. Cheap, highly perfumed soaps, composed of foul, rancid fats disguised by agreeable, penetrating odors, are to be especially avoided.

- 2. The physician should make his hands perfectly aseptic by repeated washings with soap and water, and scrubbing with a nail brush, and then rinsing with a 1:1000 bichloride solution. The funis and abdomen of the child should be wiped off also with this bichloride solution.
- 3. The cord is again cut about an inch and a half from the abdomen, and stripped after Prof. Goodell's method, so as to press out all of its gelatinous material. The bichloride solution must then again be used freely, after which the funis is tied with an elastic silk ligature which has been sterilized by first boiling for half an hour in a 1:500 bichloride solution and then immersing in a solution of iodoform in sulphuric ether 1:50. These ligatures, after having been thus prepared, should be cut into lengths of four inches and kept dry in a clean, widemouthed jar until used. Pulling's funis clamps can be easily sterilized, and are convenient and reliable instruments for securing the cord. The cut end of the cord should be touched with a bichloride tablet.
- 4. A piece of sterilized gauze, not sublimated, four inches square and four layers thick, is then prepared by cutting a hole in the centre large enough for the passage of the cord, and saturating with pure glycerin. In this the funis stump is entirely enveloped. It is then turned up on the abdomen, another pad of gauze soaked in glycerin placed over it, and the whole held in place by a sterilized flannel bandage. This bandage should be made long enough to go twice around the body, the tails crossing behind, one passing through a slit in the other, and meeting in front, to be there pinned by a small safety pin fixed just above the pubes. It is easy to remove and adjust, fits snugly and comfortably, does not slip, and holds the dressings perfectly in place. The gauze used in the dressings should not be sublimated, for the continued contact of corrosive sublimate with the skin gives rise to a very obstinate form of eczema. Chemically pure glycerin is especially indicated as an application to the umbilical stump, for the reason that it is bland, unirritating, and antiseptic, and has great hygroscopic properties, thus hastening the process of desiccation. Cords treated with it often fall within three days.

After-Treatment.—Until the funis separates the bandage should be opened twice daily and the dressings saturated with glycerin. The top pad should be removed daily and replaced

by a fresh piece of sterilized gauze. Whenever soiled the flannel bandage should be changed. After the cord falls the umbilical fossa must be filled with aristol, a dry pad of gauze placed over it, and the bandage reapplied.

Repeated microscopic examinations of the débris of cords

Repeated microscopic examinations of the débris of cords that were treated as above described have in every instance

failed to show the presence of any form of microbe.

When the umbilicus ulcerates or becomes infected, the best treatment to be pursued is repeated irrigations with peroxide of hydrogen or a 1:500 bichloride solution, after which the stick nitrate of silver is to be thoroughly applied, the parts thickly dusted with aristol and covered with a sterilized gauze pad and flannel bandage.

Aseptic precautions should be observed at all times, but especially during the prevalence of epidemics of zymotic diseases, and when the infant is exposed to a contaminated atmosphere such as exists in crowded tenements and hospital wards.

It may be urged that ordinarily the risk of infection is very little, and that as Nature, in the great majority of cases, is competent to afford full security, troublesome precautionary measures are unnecessary. The parturient forces in most cases of labor are adequate without assistance to effect delivery; is therefore the watchful care of the obstetrician to be dispensed with and the principles of his science disregarded? The danger of septicemia threatens every new-born babe, and can be certainly averted only by strict attention to asepsis; and the physician who does not practise its principles, and has septic diseases to occur to infants in his charge, is derelict in his duty and is morally if not legally responsible.

AN IDEAL NAPKIN FOR THE PUERPERAL WOMAN.

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The great importance of having an aseptic, soft, and highly absorptive dressing to take up the lochial discharge which escapes during the lying-in period cannot, I think, be overrated.

How greatly would the obstetrician's fears of septic infection be lessened if he could only feel absolutely sure that the woman whom he has just confined would be kept perfectly clean, and that every hour or two her napkin would be changed, the soiled one consigned to the fire, and a fresh one applied!

Herein, as is well known, lies the chief danger of septic infection. If the blood-stained napkin is allowed to remain for hours in contact with the contused and fissured mucous membrane of the vulva, it prevents the further escape of the lochia and causes the refuse material to back up in the vagina, where it is very liable to undergo chemical changes.

How to overcome the carelessness or wilfulness in this respect on the part of nurse, attendant, or patient, has been to me a matter of much concern. Words have proven of little or no avail in many cases, for contended against them has been the determination to avoid the labor of washing and ironing the napkins, while in still other instances the financial standing of the family has been such that they could not afford to purchase sufficient "bird's-eye" linen of which to make the required number. Hence directions, whether written or oral, failed to arouse the indifferent listeners. They did not appreciate the danger of an agent, germ, of which they knew nothing and scarcely could believe existed.

Therefore my only hope rested on the ability to find out some substance which would overcome these difficulties. It must be purchased at such a low figure that it would be within the reach of all, and thus do away with old rags and the like, besides dispensing with washing and ironing. Moreover, my objection to the use of "bird's-eye" linen was not due solely to the labor involved in cleansing them, but also to the fact that the nurse was required to be absent from the patient's room for some time, thus leaving her unattended. The mother was therefore often tempted to take up the crying infant and move about in bed, much to her own discomfort. The inclination to micturate or defecate must, under these circumstances, be resisted, and thus the desire passed off ere the nurse's return. Doubtless many cases of constipation, piles, and cystitis simply arise from this cause.

While visiting London in 1887 in search of novelties in the way of instruments and dressings, I came across a material called "Gamgee lint," which consisted of absorbent cotton

sheathed in cheese cloth. This seemed to be just the thing I sought for my puerperal compress, and on my return home I proceeded to apply it in cases of confinement. The absorbent properties of the cotton fulfilled one important requirement, while its softness and the ease with which it could be rendered aseptic made it highly satisfactory. The cheese cloth was of such a loose nature that it offered no resistance to absorption, but rather assisted by capillary attraction in taking up the more fluid portion of the discharge. As this material completely enveloped the cotton, there was no sticking of its threads to the skin, nor entanglement in the hair of the mons Veneris.

When all these favorable points were considered it seemed to be an ideal dressing, and promised better drainage than any other with which I was familiar. The cost, moreover, was in its favor, for for the trifling sum of seventy-five cents ninety-six napkins could be made. Hence for about what two or three napkins of "bird's-eye" linen would cost could be purchased nearly a hundred which were better in every way, and required no washing or ironing, and could be immediately burned when soiled. The cotton, when bought in one-pound packages, cost forty-five cents; before using it should be unrolled and thoroughly baked. The cheese cloth cost five cents a yard, of which about six yards were required, amounting to thirty cents. This, if desired, may be dipped in a ten-per-cent solution of carbolic acid and then dried.

My habit has been to bake the cotton; then cut a square from the cheese cloth, nine by nine inches, fold this over, making it four and a half inches wide; cut a piece of absorbent cotton just this size (four and a half by nine inches), and place it between the folds of cloth. In this manner is prepared in the simplest possible way a compress which is readily applied and needs nothing to hold it in place, so closely does it adhere to the skin when the parturient occupies the recumbent or semi-recumbent position.

These ninety-six compresses in all ordinary cases will last the woman twelve days—in fact, until she is able to leave her bed and the discharge has become insignificant. When we recall the fact that they have cost but seventy-five cents, that there has not been a napkin washed or ironed during her lying-in period, we may rest assured we have saved labor enough alone to recommend them to our favorable consideration.

For the first day (twenty-four hours) it is likely twelve compresses will be necessary; for the second and three succeeding days, ten each; for the sixth and six succeeding days, six each. Before applying a fresh dressing the external genitalia and the mouth of the vagina should be bathed with warm water. The patient is given four warm vaginal douches, by means of a fountain syringe, a day during the first week, and thereafter two a day. These serve a useful purpose in keeping up free drainage.

Should any odor be noticeable the compresses may be dusted with pulverized boric acid. The addition of a drachm or more of compound spirit of lavender to the water for bathing adds materially to the sense of comfort. As has already been mentioned, the temptation to save dressings by not changing them frequently is nil compared to the desire on the part of the nurse to avoid making washings for herself, therefore self-interest is abolished and the parturient reaps the benefit.

It is not advisable to make all the compresses at one time, nor should they be kept exposed in any number in the lying-in chamber, lest they become covered with dust or other septic particles. This precaution is absolutely necessary, for, otherwise, when the compress was applied the infectious matter would be brought in direct contact with the abraded surfaces of the vulva.

The compresses, when soiled to any extent, should be removed and immediately burned. In no case should they be cast into a receptacle and allowed to remain, thus becoming a breeding place for pathogenic bacteria. Too much stress cannot be laid on this point, as it is one of the rules most apt to be disregarded when there is no open fireplace in the apartment. The practice should also be condemned of tearing off pieces of what appear to be clean portions of cotton from an old and soiled compress; this has been known to give rise to a condition of sepsis, the pieces so gathered being contaminated by long exposure to the atmosphere of a warm, close room. The rules of asepsis govern and are as applicable to the lying-in chamber as in the field of abdominal surgery, and while the result in the one case may be death, in the other it renders a woman an invalid for life. With a due appreciation of this fact, and given a conscientious doctor, a well-trained, intelligent nurse, and ninety-six aseptic compresses, the lying-in woman has the very best chances for an uninterrupted and satisfactory recovery.

MY EXPERIENCE WITH TUBERCULAR PERITONITIS.

BY
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CASE I .- Mrs. C., aged 23, married one year, no children, was brought to me on December 7th, 1890, with a history of an abdominal inflammation. The abdomen now presented a nodulated enlargement, the size of a large cocoanut, midway between the umbilicus and pubes. Several members of her family had died with pulmonary tuberculosis. This, together with her history and symptoms, and the macroscopic appearance upon section, made it out clearly a case of tubercular disease. A full. free incision was made down to the purulent collection. Nothing was removed. The pus was evacuated and the pocket kept packed with gauze. She improved for a short while, when a new point of invasion manifested itself. This was in due time similarly dealt with, then another and another, until some six or seven points had been opened. It has now been nearly three years since the last incision was made. A few weeks ago she reported to me on account of an uneasy feeling in the lower abdomen. She had missed two menstrual periods. Upon examination she was found to be about three months pregnant. Her general health is good. The tissues of the anterior abdominal wall did not appear to be in a perfectly healthy condition. being to some extent influenced by pressure from the ascending uterus. Yet we have reason to believe that nothing serious will arise from this, and that she will terminate her pregnancy with but little inconvenience from this source.

Case II.—Mrs. R., multipara, aged 28. Two years ago last January abdominal section was performed by a prominent gynecologist. Tubercular peritonitis was diagnosed. The incision was at once closed. Nothing was removed, on account of the nature of the disease and the adhesions present. The condition of the patient grew gradually worse; the abdomen filled with serum; the situation was very unenviable, although the strength and general appearance kept up remarkably well. She

was brought to me on January 5th, 1892. The abdomen was reopened by making an incision just above the former one and extending it down almost through the old one. After evacuating several gallons of serous accumulation from the cavity, the tubercular deposits, which were scattered almost entirely throughout the abdominal cavity, were plainly to be seen. excessively tuberculous tubes and ovaries, and intestines which surrounded them, were adherent to each other and to the uterus to the extent of constituting a rounded mass, which was adherent to the abdomen along the line of the old incision. The task of unravelling this mass required nearly an hour, and in four places the peritoneal and muscular coats were stripped off the small intestines, which were at once repaired by fine silk and a cambric needle. After removal of the tubes and ovaries the abdomen was carefully but thoroughly washed out and adhesions between coils of intestines broken up; a glass drainage tube was placed down posterior to the uterus, and the abdomen closed. The case ran a smooth course from this time on, and she went to her home, one hundred and fifty miles distant, on February 4th. Since then her condition has been variable. At one time she will write that she is rapidly being restored to health, then again that her condition is not so favorable. It has now been twenty-five months since her operation. Her condition has gradually improved, and we have reason to hope that she will ultimately be entirely restored to health. She only suffers now from a lymphangitis down the inner side of the left leg, which existed prior to the operation, and is likely tuberculous in character.

Case III.—Mrs. T., nullipara, aged 27, married five years. Has been in poor health for several years past with the usual symptoms of pelvic inflammation. Upon digital examination there were found to exist diseased appendages. On each side of the uterus was an enlargement, in size somewhat near the fist. There was nothing to indicate tuberculous disease beyond her family history and pale appearance. Upon section the appendages were rolled up, adherent to the surrounding structures, and studded with tuberculous deposits. They were enucleated, intestinal adhesions broken up, the abdomen washed out and drained. She got well promptly from the operation and has since remained in good health. There was no tubercular infiltration beyond the tubes and ovaries and contiguous structures.

Case IV .- Mrs. K., aged 45, was admitted to my service at St. Joseph's Hospital. The abdomen was so much distended that it could not be determined whether the accumulation was ascitic or whether she was the subject of an abdominal tumor. A short incision was made in the usual place, midway between the umbilious and pubes. The fluid, which proved to be ascitic, was evacuated. There was no tumor. The peritoneum was sprinkled over with tubercles, and the tubes and ovaries were tuberculous and matted to surrounding structures; they were removed. The patient got up in due time from the operation and went home. For a time she seemed to be well, but seven months later she returned. Upon examination there was thought to be an accumulation of fluid on the left side, on a line with the umbilicus; but her vitality was so thoroughly sapped, after her delay in the second coming, that no further operation was attempted. She died a day or two later. Upon a post-mortem there was found a large collection of sero-pus to the left of the umbilicus, bounded in front by the abdominal walls, and everywhere else by the agglutinated small intestines. It is my impression that the disease began in the tubes and ovaries in this case, and affected the peritoneum secondarily. In the operation the tubes and ovaries were removed, together with some flakes of tuberculous tissue, because it was here that the worst condition presented. The case seemed to be one of acute miliary tuberculosis at the time of the operation, and there was no tendency at this time, nor had there been prior, so far as we could get a history, toward a sacculation of the fluid. It had only been two or three months from the time the symptoms first manifested themselves till the abdomen was enormously distended with eight or ten gallons of fluid. At the post-mortem, which was made seven months later, there was an agglutination of the small intestines, which formed the sac of the fluid then present, say one-half gallon, on the left side of the umbilicus. It now presented the appearance of a more chronic form, which has been usually regarded by writers as another variety of the disease.

Case V.—Mrs. K., aged 22, married more than a year, no children, was taken sick about the middle of February, 1893. Her symptoms, as I understand them, were not unlike those of typhoid fever. After she had had a treatment of some four weeks I saw the case and pronounced it to be pus tubes, but of

course could not tell the origin. Tubercular disease was suspected from the fact that her mother has for years been the subject of phthisis pulmonalis, and her little brother has had excision of the head of the humerus for a tuberculous condition of that bone. An operation was declined until some six weeks later, when the situation became desperate. She was brought into my private sanitarium at 9 A.M. on May 14th. Abdominal section was performed one hour later. The pelvis was one mass of adhesions. A cheesy pus was everywhere to be found upon a separation of these adhesions. Tuberculous deposits were to be seen upon all the serous surfaces that were free. A thorough enucleation was done, intestinal adhesions were separated, the abdomen was washed out and drained by means of a glass tube and a large gauze pack, the latter being necessary on account of the hemorrhage. After a prolonged suppuration she got up. There existed for quite a while an opening into the pelvis where the gauze was located. There was also an opening in the vaginal summit into this track made by the gauze, which was very slow to heal. The skin also was very slow in covering the incision throughout its length. But both sinuses have recently healed, and healthy skin has covered over the incision, and I regard her as perfectly cured. She has gained twenty-six pounds in weight and is leading an active life.

Case VI.—Mrs. M., aged 45, was seen by me on the 1st of May, 1893. The abdomen was considerably enlarged and had presented a history of growth as gradual as an ovarian tumor. Yet the pain and exhaustion were much severer than that ordinarily attending an ovarian tumor. No opinion as to the nature of the disease was given. The necessity of a section was explained. On May 10th the abdomen was opened, the ascitic fluid (about two gallons in quantity) was evacuated, and a tnberculous mass, consisting of tube, ovary, and omentum, the size of a small cocoanut, studded with tubercles and filled with cheesy material, was liberated and removed. The cavity from which this tumor was removed was packed with gauze on account of the hemorrhage; a glass drainage tube was introduced into the cnl-de-sac. During the operation an examination was made of the abdominal contents higher up. The peritoneum was very much thickened, and tuberculous tags hung from its surface. The liver was found to be enlarged and excessively hard, so much so as to cause us to believe there was eirrhosis of this organ. It is worth while in this connection to state that Osler, in his recent work, makes mention of the fact that tuberculosis of the peritoneum is frequently a final termination of cirrhosis of the liver. The abdomen was closed, and for more than two weeks she gained ground, took nourishment, appropriated it, and gained considerable vitality and strength, and it looked as if she would get up. At the expiration of two weeks her stomach became deranged, jaundice supervened, and she died a few days later of symptoms referable to the liver.

Case VII.—Mrs. R., aged 35, was first seen by me in the early part of June, 1893. Her health had been below par for some years, and she gave the history of having had pelvic inflammation due to diseased appendages. There was a considerable mass to the left of the uterus. A section was advised. On June 19th the operation was performed. The peritoneum was thickened to the extent of an inch or more, and tags an inch or more in length hung from its free surface. The appendages were universally adherent, and the tubes studded with tuberculous material and filled with cheesy pus similar to that described in some of the other cases. The adhesions were broken up and the appendages removed. The abdomen was here packed with gauze to promote drainage and to control hemorrhage. She has progressed only fairly well. At one time it would appear as if she would get well in a short while; at another she would be very much depressed and look as if she would not recover. Although there is pretty firm union of the incision for the greater part of its length, yet the skin is still ununited. There are two small fecal fistulæ, one on either side, corresponding to the top stitch, proving that there are adhesions between the small intestines and the abdominal parietes. There is an opening down into the pelvis where the gauze was packed, which has shown but little disposition to heal. Whilst this lady is able to sit up a portion of each day, and whilst her appetite and digestion seem to be very good, yet her assimilation is poor, she has a daily afternoon temperature, and I am very much afraid that she will ultimately wear out from the involvement of the intestines by the tuberculous disease. However, she may yet recover.

Some things of interest observed in connection with these cases are:

The so-called acute miliary variety of tuberculosis, with its

associated tendency to ascites, was excellently shown in Case 2, and also, but to a less extent, in Case 4 at the time of her admission.

The so-called chronic variety, with its disposition to thicken the peritoneum and form peritoneal tags, was exhibited in Cases 6 and 7. Its tendency to caseate and ulcerate has been shown later in Case 7, in which there exist at this time two fecal fistulæ corresponding to the two sides of the upper suture of the incision. This latter case, 7, has never manifested any tendency toward acuteness, and there has never been an effusion of any consequence in quantity.

Case 1 exhibited that variety of tumor known as omental, which is formed by a gradual puckering of the great omentum till a nodulated tumor lies across the abdomen in front of the transverse colon.

Case 6 illustrates its association with a tumor of the tube, from which the peritoneum may have become secondarily affected.

Case 4 presented a sacculated tumor at the time of her death, as evidenced by the autopsy, filled with sero-purulent fluid, which was bounded in front by the abdominal parietes and everywhere else by agglutinated intestines.

Cases 3, 5, 6, and 7 illustrate the formation of a tumor by the matting together of the tube, ovary, omentum, and intestinal coils. That this variety of tumor may become of considerable size is evidenced by Cases 5, 6, and 7.

Case 4, at the time of her death, when the intestines formed a tumor by their adhesions one with another, would have been classed with the chronic variety of the disease; whereas seven months prior, at the time of her admission and operation, it would have been denominated acute miliary tuberculosis of the peritoneum, for there were then eight or ten gallons of fluid in the abdomen.

There was but one case (Case 1) in which the Fallopian tube was not involved. One of the cases had no involvement of the peritoneum except in close proximity to the tube (Case 3).

Case 5 closely simulated typhoid fever in its clinical history.

A diagnosis of any of the above cases with any degree of certainty was with me an impossibility. The onset may be so sudden, so far as the development of symptoms is concerned, as to be not different from the ordinary acute peritonitis. Then,

again, its development may be so insidious and painless as not to present a single symptom of abdominal disease. It has been mistaken for gastric ulcer. It has been diagnosed typhoid fever. The abdomen may in one case be tympanitic, in another ascitic. The fluid in one case may be clear serum, in another bloody, and in a third purulent. The temperature may be elevated in one case, normal in another, and subnormal in another.

Of the seven cases, all rallied and recovered from the operation. One (Case 6) died early in the third week, probably from tubercular cirrhosis of the liver, which existed prior to the operation; the other (Case 4) died in the seventh month of an involvement of the abdominal viscera; and a third (Case 7), which has lived seven months, may ultimately die from an involvement of the intestines by the disease. She may, however, recover.

When we take into consideration the fact that two of these cases were placed upon the operating table with a pulse of 150, that two others were toned up under the hypodermic use of strychnia before they could be counted in condition to be operated upon, and that not one of the seven was in anything like good condition for operation; then when we take into consideration the amount of traumatism practised in order to enucleate and remove the diseased structures, we are forced to the conclusion that the mere fact of the disease being tuberculous in character does not make the operation, in its immediate results, any more dangerous than if the disease were not of this nature.

Four of these cases are up attending to their household duties and enjoying life. One is perfectly cured (Case 3). Another (Case 1) is practically well, and pregnant. Another (Case 2) is well except a lymphangitis of the left leg, which is due to an involvement, probably tubercular in character, which existed prior to the operation. Another (Case 5) is up attending to her household duties and has gained fifty pounds. It was quite a while before the skin united over the incision. The opening down into the pelvis, and the sinus in the vaginal vault, were very tardy in healing, but they have at last, eight months after the operation, healed. I see no reason why this case should have any further trouble.

In all these cases the promptness and thoroughness of the

recovery have been proportioned to the earliness of the opera-

A study of these cases has prompted the following queries:

- 1. When the disease spreads over the surface of the peritoneum, and ascites and an acute course result, is this because the disease is inherently different, or is it because the conditions are not favorable for a shutting-in of the disease by an agglutination of the affected surfaces?
- 2. When a more chronic course ensues, is it because the infection is different, or is it because the diseased surfaces become adherent, wall in, and give Nature a chance to isolate the disease and triumph over it?
- 3. Is there then a difference in the infection per se, or merely a difference in the soil upon which the seed falls? Or can the difference be explained by the presence of surfaces favorable to adhesions?

In the foregoing paper I have steered clear of all speculation, have confined my remarks to a concise report of all the cases of this disease that I have encountered, and have only deduced lessons which have been furnished by these seven cases. It is very evident to me that tubercular peritonitis is an operable disease. If taken early, and the diseased structures thoroughly removed and the abdomen thoroughly irrigated, it can be cured. Let us hope that these conditions may yet become curable by the surgeon, as many other conditions, formerly regarded as hopeless, are now relieved by operative interference. Ideas concerning this disease are in their formative stage. The lines which are to guide us have not yet been fully laid down, but are to be determined in the future. A literature is being created. What has been and what is being done in the way of operations for relief, and the results therefrom, is the desirable thing to be known. In my opinion the honest report of cases will outweigh in value all the theories and speculation imaginable.

Conclusions.—1. Tubercular peritonitis is an operable disease.

- 2. The immediate danger from the operation is not materially influenced by the character of the inflammation.
 - 3. An early operation is of greatest value.
- 4. The chronic or slowly progressing variety offers the best indications for surgical interference.
 - 5. When the primary deposit is in the tubes, which Winckel

declares to be in fifty per cent of the cases, an early salpingotomy will cure the disease.

6. Operations later in the disease will frequently prolong life and possibly cure.

155 3D STREET.

REPORT OF A CASE OF PROLONGED PROLAPSUS FUNIS IN TWIN PREGNANCY.¹

BY

GEO. J. LOCHBOEHLER, M.D., Washington, D. C.

On October 20th, 1893, I was called at 7:30 A.M. to Mrs. Elizabeth McR., white, æt. 24, primipara. She had been in active labor since midnight, but did not suppose she would be confined for three weeks to come. Upon my arrival, within a few minutes, the woman waiting upon her informed me that "the bag of waters broke at 6 o'clock," followed immediately by the cord, but she did not see fit to call medical aid, as she thought the child would be born soon after.

The patient was having strong bearing-down pains, and upon inspection I found the cold and pulseless, looped umbilical cord prolapsed to the extent of half a foot between the thighs. Digital examination revealed a presenting vertex high up in the pelvis, but no other parts could be felt. The os was dilated sufficiently to allow full reposition of the cord; each pain, however, drove the funis out of the vagina, and in order to hasten the delivery by version I called Dr. J. L. Suddarth, who lived but a short distance away, to assist in the case. Without an anesthetic he at once brought down the feet and extracted an asphyxiated, feebly developed male child, which he resuscitated in a few minutes by the usual means. I gave my attention to the mother, and the second fetus presented at once in the right occipito-anterior position in a separate sac. After allowing free dilatation to go on for fifteen minutes the membranes were ruptured and a large, normal child, also a male, was born. The placenta with its two cords followed within a few minutes.

 $^{^{\}rm 1}$ Read before the Medical Society of the District of Columbia, January 31st, 1894.

The puerperium was uneventful throughout, the patient sitting up on the twelfth day.

The interesting feature of the case is the fact that the first child was born alive after the great length of time the funis was prolapsed—from 6 o'clock to 8:15 A.M., the exact time of the termination of the second stage.

In looking over the literature on the subject I can find no instance recorded of such prolonged prolapse. Winckel 'cites a case in which the cord protruded for more than an hour, and, after pushing same over the head, a living child was delivered by forceps. Other observers report cases in which the prolapse lasted from a few minutes to nearly an hour, and all agree that when pulsation of the cord ceases the death of the child is almost certain, unless speedy delivery is effected; and in our case we were greatly surprised to see a living child born, as we had informed the mother it had perished.

55 K STREET, N.W.

THE RELATIONS BETWEEN SALPINGITIS AND APPENDICITIS VERMIFORMIS, AND THEIR IMPORTANCE TO THE GYNECOLOGIST.2

BY

J. T. BINKLEY, JR., M.D.,

Gynecologist to the Chicago Hospital, the Charity Hospital, St. Luke's Free Dispensary ; Fellow of the Chicago Gynecological Society,

Chicago.

PROBABLY no subject in medicine or surgery has occasioned so much talk among the laity and created so much interest in the profession as appendicitis. Dr. Richardson, of Boston, says: "I am firmly convinced that appendicitis is the most important acute abdominal disease of the present time." Every gynecologist appreciates the importance of tubal affections. The relations between these regions in the female must then be considered of vital importance to the gynecologist.

It is not my purpose to dwell especially upon the affections, or

^{1 &}quot;Lehrbuch der Geburtshülfe."

² Thesis read before the Chicago Gynecological Society, January 19th, 1894.

to rehearse the pathology of the uterine appendages, but rather to present to you a résumé of the opinions of a few of the most experienced writers upon the subject of appendicitis, and to add my own limited experience.

Anatomically the appendix does not differ in structure from the intestine. Its walls are composed of four coats, mucous, connective tissue, muscular, and serous. Its average length is about four and one-half inches, and its size about that of a No. 9 English sound. The lumen is very small, and the cecal orifice partly closed by a valve. In location it is very variable. It originates from the posterior and inner side of the caput coli, and, according to McBurney, is usually to be found directly under the middle point of a line drawn from the umbilicus to the anterior superior spine of the ilium. The free extremity of the appendix may radiate in any direction from this axis around the head of the colon. In two hundred cases examined by Ferguson it was directed inward in eighteen cases, downward in eleven cases; it was in relation with the head of the colon posteriorly in seventy-five cases, and was so placed in the iliac fossa in seventy-seven cases that a perforation would take place into the retroperitoneal cellular tissue. The few cases in which the appendix was directed downward, according to Ferguson's statistics, are difficult for me to understand. I have seen five consecutive cases with the appendix pendent, but all of these cases were females, whose broad pelves invite the descent of the appendix; and it may be that Ferguson's observations were upon men, whose appendices do not so often descend into the pelvis. Briggs states that in "three-fourths of all cases the appendix is directed below." F. Byron Robinson has found the appendix over the brim of the pelvis in twenty-five per cent of all cases which he has examined.

It is in this dependent position, when inflamed, that the appendix presents the most interesting features to the gynccologist. I have twice found it attached to the Fallopian tube, but apparently not diseased. I once saw it firmly adherent to a large pus tube, from which it had been infected; I recently assisted Dr. Steele in removing an appendix thus located, and Dr. Martin found the appendix attached to and penetrating a large tubal abscess, which it had probably caused.

In order that I may better illustrate the points which I desire to make in this paper, I wish to report briefly the following cases:

Case I.—Mrs. W., a widow, called at my office in October last. She presented the following history: Aged 43 years; married seventeen years. Her first and only pregnancy, sixteen years ago, resulted in a miscarriage a few weeks after conception. Her present illness dates back two years, the symptoms being occasional pain in the thigh and daily fever. Physical examination was negative. She weighed one hundred and eighty-six pounds. The abdominal wall was about four inches thick and the vulvar cushion two or more inches in thickness. Bimanual palpation revealed little more than the outline of the uterus. By means of the sound I discovered that the uterus was in normal position. Through the speculum I saw no pathological conditions, and rectal examination was negative but excluded hemorrhoids.

My diagnosis of pyosalpinx was made principally from the reflected pain in the thigh, and the slight elevation of temperature in the evening. This reflected pain down the obturator, or anterior crural nerve, into the thigh, and the local pain produced by moving the neek of the womb laterally while the patient stands erect, have proven in my few cases of salpingitis almost pathognomonic signs. Upon opening the abdomen the uterus was found high up and the tubes reflected to the sides of the pelvis, then downward and backward, and were firmly adherent in the pelvic fossæ. To the right tube was attached what I first thought to be a knuckle of the small intestine, but which proved to be the appendix. I caught a fold of its mesentery with a pair of catch forceps, then separated the slight adhesions without difficulty, with the intention of bringing the mesentery and the appendix into view; but the mass slipped from the forceps and disappeared. Owing to the thickness of the abdominal wall, and other complications encountered, I did not again secure it. The adhesions of the tubes, which were quite firm and extensive, were separated, after a tedious dissection with the finger, and the tubes and ovaries were ligated and removed. The abdominal cavity was thoroughly flushed with hot sterilized water and closed without drainage. The patient left the Chicago Hospital at the end of six weeks, and walked two blocks to her home.

Case II.—Mrs. J. M. P., aged 43 years; mother of three grown children; no miscarriages; no history of pelvic inflammation; menstrual function regular and normal. The only symptoms

were a recently developed pain over the region of the cecum and a reflected thigh pain of longer standing. Examination revealed a cystic tumor on the right side the size of a turkey egg, apparently within the broad ligament. I advised operation, and sent the case to Dr. Franklin H. Martin for his opinion. Dr. Martin concurred in my diagnosis, but added: "The tubes are also infected, in my opinion." Upon opening the abdomen, in the presence of Drs. Martin, White, and assistants, the tubes were found enormously enlarged; they projected from the uterus to the sides of the pelvis, and were as firmly attached as were the tubes in the first case. A cyst from the right ovary had extended between the folds of the broad ligament, and the tube was in consequence lifted up an inch or more. In a fold or crease between the ovary and tube the appendix was firmly attached for about an inch and a half of its lower extremity. The removal of the appendix seemed advisable, as I feared that hemorrhage might follow the breaking-up of adhesions. This was easily accomplished, because the head of the colon lay well down over the brim of the pelvis and toward the median line. Both tubes were diseased. No drainage was required. The operation was done two weeks ago, and the patient is now doing well. (Specimens exhibited.)¹

Case III.—The third case demonstrating this most important subject recently came under my observation in Dr. Martin's service at the Chicago Hospital. Mrs. E., aged 36 years; married fourteen years; two children 12 and 7 years of age; one miscarriage four years ago, at ten weeks' gestation; not since pregnant; had typhoid fever and pelvic inflammation two years ago. Last July she had another attack of pelvic inflammation, followed by a tumor in the right iliac region, attended with pain down the right thigh and a discharge of pus per rectum. Diagnosis: pyosalpinx on the right side complicated by appendicitis.

Laparatomy revealed a large, encysted tubal abscess adherent to the head of the colon and to the omentum. After separating these adhesions, the appendix was found to have penetrated into the centre of the abscess and to be firmly adherent to its walls. Upon examination of the mass after its removal the appendix was found to be perforated at its distal extremity, thereby making a direct open canal from the caput coli to the dilated Fallopian tube. The left tube was not diseased. The perforated extremity

¹ It is now ten weeks after the operation and patient is entirely recovered.

of the appendix had become attached to the Fallopian tube; its infections microbes had caused ulceration and perforation of the Fallopian tube, and planted the seed in its lumen which had grown and multiplied until a pint of pus was the result. Whenever distention of the tube occurred its contents were expelled through the appendix into the bowel and passed per rectum.

The above reported cases clearly demonstrate several important factors which specially interest the gynecologist. Two great classes of cases are here represented: first, those in which the appendix is infected either directly or indirectly by the tube; and, second, those in which the appendix plants the infection in the tube. In the first class we have the enlarged and inflamed tube presenting an attractive surface to which the wandering appendix may become attached. As the result of this attachment there may occur a direct infection of the appendix by the transmission of microbes directly through the walls of the tube and the appendix, according to the theory of F. B. Robinson, or the appendix may become infected indirectly by being bent upon itself, or by having exudations thrown about it, causing constricting bands. These bands and bends produce obstruction, and the obstruction causes foreign particles to be retained, and salpingitis naturally results.

Dr. Martin's case is a beautiful example of the second class; it shows the manner in which the tube may become infected from the appendix. Of course it is not impossible in this case for the infection to have come about as in the other two cases, but it is highly improbable. The history of recurrent pain in the appendicular region, followed by tubal abscess, only upon the right side, without infection of the left tube, points to the appendix as the seat of infection.

The first class of cases I should consider less dangerous to handle than the second, because the appendix is often attached only by its mesentery or by its external surface, without perforation or other pathological lesion, and it may be left after separating it from the tube. I should not, however, advise its being left, unless, for instance, symptoms of shock should make it necessary to quickly conclude the operation. The operation might be unduly prolonged on account of the difficulty of ligating the appendix through a median incision, and especially would this be the case in fleshy persons with the appendix long and a high caput coli. In the second class of cases, however,

where the tube is the primary seat of infection, it is usually perforated, and cannot be left in the abdominal cavity, but should be taken out, if possible, as soon as discovered.

What, then, are the lessons taught by these cases? First, that greater care must be exercised in freeing the uterine appendages from adhesions upon the right side than upon the left; second, that all detached tissue upon the right side should be carefully examined with the expectation of finding an adherent appendix, which, if found, should be removed. I should strongly advise its removal in every instance where it has once been adherent, because of its tendency to become adherent to various points on the peritoneum.

After carefully considering the peculiar tendency of the appendix to become adherent to the surrounding viscera, and knowing that pain is the dominant symptom of such adhesion, it seems probable that this body may be responsible for a large percentage of the colic and reflected pains that follow laparatomies.

Our deductions from Hektoen's statistics are that four per cent of all women have appendicitis. A large percentage of the patients who call upon the gynecologist are probably of this class, and seek advice, not because of appendicitis, but because of reflected pains which they refer to the uterus. Robinson states that he has observed, in the examination of one hundred cases, that the left tube has the larger lumen and is infected nearly twice as often as the right tube. No doubt, therefore, the smaller lumen and orifice in the right tube tend to prevent the invasion of infection from the uterus, and the appendix is responsible for the infection of the right tube more frequently than is generally supposed. These statements of Hektoen and Robinson strengthen the claim that the appendix is a body of great importance to the gynecologist.

In the three cases here reported, and in two others, making five in all that have come under my observation recently, I have found the appendix hanging over the brim of the pelvis. I regret that I did not observe and record its position in a large number of laparatomies at which I have assisted during the past few years, because this report would then be of more value from a statistical standpoint.

I believe that the chief cause of downward position of the appendix in women is the shape of the pelvis, which is broad and flaring, and does not have the forward ridge or angle of the

pelvic brim under the head of the colon which is found in men-Two other factors occur to me which favor this position of the appendix: first, the corset, which tends to force it down; and, second, childbirth, which relaxes peritoneal attachments.

VENETIAN BUILDING.

THE USE OF CERTAIN ANTISEPTICS IN MIDWIFERY.

EDWARD E. MORSE, M.D., Washington, D. C.

In no department of either medicine or surgery have the principles of antisepsis been of more real value, or borne richer fruit, than in the field of midwifery. Compared with the results of former years before Lister made his great discovery, the mortality among puerperal women has been reduced to an almost insignificant figure. Of the truth of this statement we have abundant evidence by reference to the records of those maternity hospitals where accurate observations were, as they are still, made; thus allowing for a comparison of the results of the pre-antiseptic days and the present. Then it was the usual experience to find a rise of temperature after delivery, usually higher on the second or third day, the so-called "milk fever" of the older obstetrical writers, supposed to be incidental to the establishment of the milk function. To-day it is the rarest thing in the world to find an elevation of temperature after delivery in maternities where the principles of Lister are advocated and carefully carried out, the old terms "milk fever," "puerperal fever," being almost unknown. Indeed, the practitioner of to-day whose patient has any rise of temperature above the normal, in the absence of any organic lesion or abnormal condition sufficient to account for it, knows he has a case of sepsis to deal with, and treats it accordingly, with a result which justifies him in his diagnosis. Fortunately the principles of this great truth are now so generally accepted and universally taught that it is not necessary to defend them, the purpose of this article being rather to discuss certain antiseptics commonly used by obstetricians, and to point out the respective virtues and disadvantages connected with their employment in midwiferv.

That change is the necessary outcome of the laws of growth and progress, the profession of medicine can, better perhaps than any other branch of learning, bear abundant witness. That which was yesterday the accepted truth is to-day cast aside or essentially modified by fresh discoveries and more extended researches. This is well exemplified in our experience with antiseptics. Deeper acquaintance with many of the various bodies to which germicidal properties have been attributed has revealed the fact that not a few have been overestimated, while others heretofore unknown have been discovered, and at the same time our wider knowledge of bacteriology has modified our demands for the ideal antiseptic. In brief, our knowledge has broadened with our increased experience, so that of the great number of bodies which have been brought forward from time to time, there are but few which, having been in use for a considerable length of time, are still employed extensively. Among these may be mentioned the bichloride of mercury and carbolic acid. These two salts, like many others employed for a similar purpose, belong to the poisons, and act as irritants if employed extensively. In fact, of all the various agents which have been discovered possessing a marked antiseptic action, there are comparatively few which are not of a like character in this respect. It seems a matter of no little difficulty to find a body which, having the required germicidal powers, shall at the same time be innocuous. When such a body is discovered we shall have the ideal antiseptic. To no class is this of more practical importance than to the obstetrician. Considering the condition of the genital canal during and after labor, when the tissues are especially favorable to absorption owing to the imperfectly closed orifices of their blood vessels, the employment of any antiseptic solution which is of a poisonous or in any sense injurious action on the system is fraught with danger. Our patient may escape septic infection, only to die from something else for which our mistaken zeal is directly responsible.

In the corrosive chloride of mercury we have one of the most powerful germicidal agents known. Miquel in his tables places it the fourth on the list, the mercuric and silver iodides and the peroxide of hydrogen being the three bodies which precede it. To insure the complete destruction of germs and spores, we are directed by bacteriologists to use it in a solution of the strength of 1:500. This is, we believe, the proportion in which it is used

as a disinfectant for the hands and external genitals in maternity hospitals. The accoucheur usually has a solution by the bedside, into which he dips his hands as may be necessary during the progress of the case. When employed for douching (uterine or vaginal) it is of course used in a much milder solution. What effect on the tissues has this strong (1:500) solution? You have but to observe the condition of the hands to find out. The nails are blackened; the skin is red, rough, and sore, and completely changed from the soft, velvety appearance of healthy skin. This same effect, only to a greater degree, is exerted on the mucous membrane of vagina and perineum. Nature, who does her work so admirably when left free to follow her own devices, prepares these parts for the great stretching to which they must be subjected in the birth of the child, by pouring out from the glands of cervix and vagina an abundant secretion of mucus, which serves to soften and lubricate the otherwise resisting structures. This is particularly necessary to the perineum. It is Nature's plan for the protection of this important part, and it is our duty to assist, and not retard, her efforts. We do retard them most seriously when we bring in contact with the perineum a strongly astringent solution, either by a vaginal examination or in our efforts to protect this structure. Thereby it is made dry, hard, and non-distensible, the very reverse of what it should be. The result is obvious. The child's head, meeting the obstruction which bars its advance, plays back and forth, alternately advancing and receding, trying all the while to gradually stretch the perineum sufficiently to allow its passage. Finally, with the increased expulsive efforts, it forces its way out, but not until the perineal tissues have given way by laceration. That laceration of the perineum has occurred repeatedly from just such a cause we have had abundant opportunities of observing; the abandonment of the corrosive, and the substitution therefor of a milder agent, being marked by a decided diminution in the number of such accidents. Considering the serious nature of this injury to our patient, whereby the liability to septic infection is greatly increased, even if we stitch the perineum afterward, or the still graver dangers attendant upon leaving it unrepaired, this fact alone should forbid our employment of so powerful an agent.

Again, it is well to recall to mind the fact, well known to obstetric writers, that it is never safe to use the bichloride of mercury

when disease of the kidneys is known to exist or suspected. Patients so afflicted are especially liable to poisoning. Dr. H. C. Wood says the mercurial salts are probably eliminated from the system largely through the channel of the kidneys. Doubtless it acts as an irritant to this organ. In experiments on the lower animals a degeneration of the renal epithelium has been found. As disease of the kidney is predisposed by pregnancy, the so-called "kidney of pregnancy" being a well-recognized pathological condition, the use of the salts of mercury would seem to be strongly contra-indicated. Finally, it is claimed that the bichloride is decomposed by the blood. If this be true, its efficiency would be greatly impaired in those conditions in which there was any amount of bleeding—as, for instance, in post-partum hemorrhage, where a hot antiseptic douche is required. From these considerations it must be evident that the agent under discussion is not one adapted to the requirements of midwifery, however efficient it may be for the purposes of the surgeon.

Among the more recent additions to the list of antiseptics and germicides is creolin. Belonging to the coal-tar series, it strongly resembles carbolic acid, although not possessing the poisonous and irritant properties of that body. It seems more like tar than carbolic acid. With water it forms a milky emulsion. Experiments have proved that it possesses strongly germicidal properties, being in this respect superior to carbolic. Sternberg, in his valuable work on bacteriology, says of it as follows: "Van Ermengem, as a result of numerous experiments, arrived at the conclusion that creolin is a cheap and useful disinfecting agent, in a five-per-cent solution, for various pathogenic organisms. Kaupe reports that in his experiments a ten-per-cent solution killed anthrax spores in twenty-four hours." These investigations would appear to be sufficient to establish its claims as a germicide. It has been used repeatedly in obstetrics in large quantities as a douche, and fills all the requirements admirably, without any of the dangers attendant upon the use of mercury. The emulsion which creolin forms with water answers all the needs of a lubricant to the hand in addition, and thus does away with the necessity of vaselin and all such preparations, the use of which is never wholly free from risk.

Another of the later antiseptics is lysol. This has been

highly extolled by the Germans, by whom it is used in several clinics and lying-in hospitals. It possesses strongly germicidal properties. With water, in which it is freely soluble, it forms a soapy solution and easily removes all dirt from the skin, and like creolin, as above mentioned, acting as a lubricant and dispensing with the use of vaselin. Both creolin and lysol, from their efficient germicidal properties (and at the same time their freedom from poisonous and irritating qualities), approach nearer the ideal antiseptic for midwifery than any others in common use. The results from their employment have been in every sense satisfactory.

In conclusion, while believing fully in the efficiency of either creolin or lysol, it may be said that the practice of first using the 1:500 solution of the bichloride of mercury for the hands, followed by their immersion in the creolin or lysol, is one which has been advocated, and of course with good results. By this arrangement the maternal soft parts are quite protected from contact with the corrosive, and the danger arising from such use avoided.

811 9TH STREET, N. W.

A NEW METHOD OF TREATMENT OF UTERINE MYOMA WITHOUT REMOVAL OF THE UTERUS, BY LIGATION OF THE OVARIAN AND UTERINE ARTERIES.¹

BY

F. BYRON ROBINSON, B.S., M.D.,

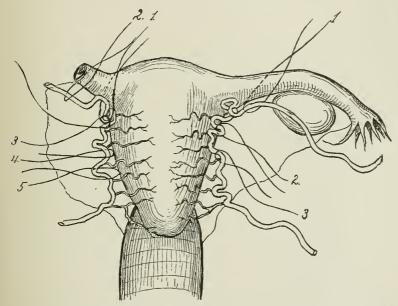
Professor of Gynecology, Post-Graduate Medical School; Gynecologist to Woman's, Chicago Charity, and Post-Graduate Hospitals.

(With one illustration.)

In November, 1892, a woman, aged 42, consulted me on account of excessive hemorrhage from the uterus of eighteen months' standing. During the last six months she had lost so much blood that she was becoming a bed-ridden invalid. Examination revealed a myoma of the uterus the size of a child's head.

¹ Read before the Chicago Gynecological Society, January 19th, 1894.

She entered the Woman's Hospital. Assisted by Drs. Shibley and White, I made abdominal section. On account of extensive adhesions, thick abdominal wall, and the exhausted condition of the patient, it was thought unsafe to attempt to remove the tumor. I therefore decided to ligate the ovarian artery, and then to ligate the uterine artery as far down as it was thought safe without risk of producing gangrene of the uterus. I applied two ligatures to each uterine artery for about two-thirds of the distance from the tube to the internal os. I did not remove the ovaries and tubes. The patient made a good recovery; an abdominal fistula remained for several weeks.



This drawing is intended to show the method of operation. The right tube and ovary have been tied by ligature 2 and removed. Ligatures 1 and 3 are introduced on an aneurism needle and tied. Ligature 4 shows the lowest point at which I have ligated. Ligature 5 might be considered to be within the danger line. The left tube and ovary have not been removed, but ligature 1 includes the tube and artery. I have ligated the uterine artery as low as the point indicated by ligature 3 on the left side. The drawing is somewhat diagrammatic, but the arteries are as natural in their position and relations as I could draw them.

Three months after the operation the uterus was about twothirds its former size, and three months later it was one-half its original size. For the past six months the atrophy has been continuous. She has had occasional slight hemorrhages, but considers herself well.

I have since performed this operation three times, and so far

with good results. The second operation was performed about five months ago, and the patient was doing well when I last saw her, several months after the operation. The last two cases are too recent to judge of the permanent results.

This operation will be useful in certain cases in which it is desired to cause atrophy of the uterus and immediate cessation of menstruation. In such cases ligation of the ovarian arteries and of the uterine arteries along the side of the uterus, together with removal of the Fallopian tubes, will accomplish this result by cutting off the chief blood supply to the fundus and body of the uterus. By this operation the shock attendant upon hysterectomy, which is so often fatal in very anemic patients, will be avoided.

Great care and judgment must be exercised, in the cutting-off of the blood supply of the uterus, not to go beyond the limit of safety as regards gangrene. The minimum amount of blood supply necessary for life of the uterus cannot be stated, but I have demonstrated that the ovarian artery and the uterine artery for two-thirds of the distance from the tube to the internal os can be safely ligated.

Dr. Franklin H. Martin has shown, in his operation of ligation of the uterine arteries through the vagina, that it is safe to ligate both uterine arteries as they cross the ureters. It must, however, be remembered that the uterus is fed by perpendicular branches from the utero-ovarian arteries, and hence that each uterine segment is supplied by its own straight artery. The uterus is very tolerant to variation, or even to sudden cessation, of its blood supply.

In the ligation of the arteries many nerves, including the automatic menstrual ganglia, will necessarily be destroyed, and immediate cessation of menstruation will result. This artificial menopause will lessen the nourishment of the uterus.

This operation will aid in:

- 1. Atrophy of uterine myoma.
- 2. Cessation of menstruation.
- 3. Atrophy of the uterus and checking uterine hemorrhage.

The operation heretofore performed to induce artificial menopause has often failed, or the desired result has not been obtained for months or even years.

URETHRAL CARUNCULÆ.1

BY

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My object in bringing this paper before you is to direct attention to the frequent seat of new growths about the female urethra. There is hardly any affection to which women are liable which causes greater discomfort or pain than urethral caruncle. By this term is meant the spongy excrescences or vascular growths arising from the urethral mucous membrane. They are of a soft, spongy texture, generally irregular in outline, and of a granular appearance. Their size varies from a pin's head to an ordinary marble, occasionally larger. As to their structure, they consist of hypertrophied papillæ, extremely vascular, the vessels being enormously developed and tortuous; nerve filaments have also been found to exist in them, though their sensitiveness is not positively due to the presence of these. They are of a deep-red color, of slow growth, and, as already stated, they are generally exquisitely sensitive to the touch.

My observations lead me to state that when small these growths are generally sessile; as they increase in size, however, their base forms more or less of a pedicle. In the majority of cases from one to three in number are present; not infrequently, however, we meet with cases where as many as ten or twelve are found. They are met with either along the borders of the meatus, or just within it along the lateral and posterior walls of the urethra; at times they may extend within the canal for an inch or more.

As to their origin, to attribute the development of these neoplasms to any positive element is, at the present day, impossible; their etiology is still obscure. Marriage, with its attendants, is undoubtedly in the vast majority of cases the predisposing cause. So far as my own observations go, all have occurred in married women; yet they are also seen in single

¹ Read at the eighty-eighth annual meeting of the Medical Society of the State of New York, Albany, February 6th, 7th, and 8th, 1894.

women, though more rarely. They are most frequently observed in middle-aged and elderly women, and less often under 30 years of age. Records show that other affections of the genital organs are almost inevitably present, and my experience bears this out in every one of the cases observed personally. One ease in particular, in which I removed as many as a dozen small growths, the largest the size of a French pea, and of interest to me because of its novelty, was attended with a dilated vein, the diameter of a goose quill, along the course of the urethra, and a varicose condition of the anterior wall of the vagina, accompanied by considerable hyperesthesia in the immediate vicinity.

The symptoms to which these neoplasms give rise are very evident. The most important is the characteristic pain. This may be described as agonizing or excruciating, occurring toward the closing act of micturition, and very often continuing for a time after. This pain is of such a character frequently that the patient dreads the process of evacuating her bladder; it may radiate to the hips, lumbo-sacral region, or along the thighs. There is a frequent desire to urinate, accompanied by more or less tenesmus, which in some cases is almost unbearable. Unless the growths are of considerable size, they are rarely attended with hemorrhage. The patient complains also of an aching or pressure, for hours at a time, about the lower pelvis and vulva, increased upon motion or contact from any source. A mild pruritus and burning sensation is occasionally present when the growths are very small and situated about the meatus. The patient becomes nervous, irritable, and generally depressed, added to which is the attendant general weakness consequent upon the presence of insomnia.

As to diagnosis, the above history, more or less modified, or the history of painful mieturition, gradually increasing and extending over a considerable length of time, should, especially in middle-aged women, lead us to suspect the presence of these growths, and an examination of the urethra should always be made. My observations, in as many as thirty cases within the past ten years, lead me to say that the size of these growths has little bearing upon the attendant pain and suffering; in almost every instance I have noticed that the small and numerous sessile growths were more sensitive and gave rise to greater pain and distress than those of large size and having a pedicle.

In many instances, particularly where these growths are of small size and entirely within the canal, separation of the labia does not render them visible, and the symptoms may be readily attributed to a cystitis or urethritis; dilatation of the urethra, however, which should always be employed, will render the condition obvious.

The treatment of these cases is at times very troublesome and not attended with any degree of immediate satisfaction; patience and perseverance, however, on the part of both physician and patient, will ultimately accomplish the desired end. Cocaine anesthesia is to be resorted to preliminary to treatment; occasionally we will be obliged to resort to general anesthesia. The methods employed by me in the removal of these neoplasms are torsion (twisting them off) and excision (dissecting them out completely). When small they should be drawn down and held in view by means of a tenaculum, and then either twisted off, if possible, by means of a small, curved serrafine forceps, or they should be dissected out, cutting them off completely at their base by sharp-pointed scissors. Torsion gives rise to but slight if any hemorrhage; even in excision hemorrhage is usually inconsiderable. If the latter be rather free or persistent, the application of Monsel's solution of iron, or the actual cantery, or, if need be, tamponing the nrethral canal temporarily with a conical plug of iron-cotton, willarrest it. Twice I have had occasion to resort to the sharp curette where the growths were well within the canal, numerous and aggregated, being difficult of complete excision by use of scissors. More rarely, where the growths are single, of large size, presenting outside of the meatus, and affording an easy pedicle, the ligature or actual cautery may come into play in their removal.

These radical measures of treatment have always been followed by the immediate application of a solution of nitrate of silver, repeated each alternate day for a considerable length of time—beginning at first with a drachm to the ounce, and gradually reduced to ten grains to the ounce—as much to do away with an irritable condition of the mucous membrane generally present as to prevent their return. Should these growths show a disposition to return, as they occasionally will, more especially those of small size, the above measures of treatment should again be carefully gone over with. The use of the catheter is rarely required subsequent to operative procedures.

Very rarely indeed we may meet with cases where treatment directed to the condition itself results in complete failure. Such a case came under my observation some four years ago, in which two years later I assisted Dr. Sims in performing an artificial vesico-vaginal fistula, in order to give complete rest to the urethra, and in the hope of eradicating the trouble by this means. Four months ago the fistula was closed by operative procedure, and the result has been all that could be desired.

203 West 78th street.

TRANSACTIONS OF THE CHICAGO GYNECOLOGICAL SOCIETY.

Meeting of January 19th, 1894.

The President, Fernand Henrotin, M.D., in the Chair.

Dr. F. Byron Robinson read a paper on

A NEW METHOD OF TREATMENT OF UTERINE MYOMA, ETC.1

Dr. Franklin H. Martin.—On November 15th, 1892, I made what I considered a new operation for bleeding uterine fibroids, at the Woman's Hospital. The case has been reported and very thoroughly discussed. It was very generally discussed about the Woman's Hospital. About a week later Dr. Robinson performed his operation in a case in which he says it was impossible to remove the uterus. My operation differed from his, in that I succeeded in cutting off a large portion of the blood supply without opening the peritoneal cavity—in other words, in ligating the broad ligament from below, including not only the blood supply but also the nerve supply to the uterus; in this way I argued that I succeeded in cutting off two-thirds of the blood and nerve supply to the uterus without doing a major operation. I have operated by this method now eight times, and my cases have all done remarkably well; the results have, in every case without exception, been better than have been the results from removal of the uterine appendages in like conditions. Some of the operations were very severe; in the majority of them it would have been impossible to remove the tumor had I done celiotomy. In some cases the weakness of the patient, on account of hemorrhage, would have contra-indicated hysterectomv.

The good points in Dr. Robinson's operation have been

¹ See original article, p. 484.

pointed out. There are reasons, I believe, for bad results from the operation. When I read my paper in December a year ago, one of those who criticised my operation was Dr. Robinson, and his point of criticism was that, in cutting off such a large proportion of the blood supply of the uterus, gangrene of the uterus was likely to result, and that this would be especially true in desperate cases, in which I had suggested that the incision might go high enough—which is possible—to reach the ovarian artery. In one of my cases I could easily have ligated from the vagina not only the uterine but also the ovarian artery. Now Dr. Robinson does exactly what he criticised me for doing-namely, taking away the tubes and ovaries. If he properly removes these he should include the ovarian arteries. If this be done it seems to me that he will make just the mistake he warned me against; if he goes further and ligates the uterine artery, leaving, as it will, no blood supply to the uterus except the small amount which comes through the vaginal and the deep epigastric artery, there might be possibility of gangrene of the uterus.

If it is necessary to do an abdominal section, and if it is possible to go as low down on the sides of the uterus as the uterine artery, there is no reason why the uterus should not be removed. If I can ligate the uterine artery where it branches up the sides of the uterus, I can remove the uterus with very little more danger than attends Dr. Robinson's operation. In other words, if a minor operation for fibroid tumor is to be done, I believe

my operation is the one to do.

Dr. F. Byron Robinson, in closing the discussion, said: In regard to Dr. Jaggard's anatomical criticism, I would say that I have very carefully dissected about sixty bodies, and have never found the branch from the deep epigastric artery large enough to give the uterus any distinct nourishment. It is generally the size of a pin. I think I can safely assert as an anatomical fact that, if the ovarian and uterine arteries are ligated, the uterus can be removed without fear of hemorrhage. In regard to ganglia, I never understood that Mr. Tait claimed their discovery. He said that Dr. Johnstone pointed out to him a large nerve which traversed the broad ligament, and that he always attempted to ligate this nerve in removing the appendages, and by so doing menstruation soon ceased. I have done many careful dissections of the broad ligament, both in infant and adult female cadavers, and have not been able to find the large nerve spoken of by Mr. Tait. I find the hypogastric plexus spread out in the broad ligament, extending up the sides of the uterus and entering its substance. The periphery of the hypogastric plexus spreads out like a fan in the broad ligament. If one will take an infant cadaver and put it in pure alcohol for six weeks, the uterine nerves can be clearly traced from the abdominal brain to their termination in the uterus and tubes. At the termination of the hypogastric and ovarian plexuses, or at least at

that part which supplies the uterine and tubal walls, are located small ganglia which I styled several years ago the "automatic menstrual ganglia." These rule the menstrual rhythm, just as similar visceral ganglia rule the rhythm of the heart, intestines, or liver.

This operation is entirely original with me; I never saw it in

any book, and never heard it suggested.

As Dr. Jaggard says, we unfortunately must disagree as regards ovulation and menstruation. I have watched a good many babies and have found many of them ovulating, and I have found women at 70 years of age ovulating; therefore ovulation is constant from intra-uterine life until the ovary is worn out by ovula-Menstruation, however, is a totally different phenomenon; it begins at a distinct period, and ends when the hypogastrie plexus atrophies. It is a periodic process, lasting about thirty years, while ovulation may last sixty or seventy years. Calves are the best animals in which to observe ovulation and menstrua-They ovulate distinctly at birth, before birth, and after birth; but they do not menstruate until they get older. When the tubes and a considerable portion of the uterine artery are carefully ligated, I think the menstruction will soon stop, because we have tied off the main branch of the hypogastric plexus which nourishes the uterus.

Dr. Martin mentioned one point on which I do not think we will agree. He says if he can ligate the broad ligaments as far as described in the operation, he will take the uterus out. If the patient is strong it is possible the removal of the uterus is better, but it will be a greater shock. A great many patients with fibroids have a pyosalpinx; this can be easily removed in the course of my operation. Perfect surgery is saving the patient, not anatomical dissection, and I want to save as many patients as I can. This operation is very simple, and is original. I am very well pleased with it. Dr. Martin's operation, which ligates through the vagina, is a simpler operation, and I would rather be the author of it than of this, because I think it is less dangerous. But my operation supplements his, and they happened to be originated at the same time.

Dr. W. W. JAGGARD read a paper on

OLIGOHYDRAMNION.1

Dr. F. Byron Robinson.—Dr. Jaggard's case has strength ened my conviction that the origin of the liquor amnii is in the kidneys. My first ideas upon the origin of the liquor amnii were obtained in 1885 from Gusserow, who said that the liquor amnii could not originate from the kidneys. Winckel stated that in a number of cases where the kidneys were so large that the child could not be delivered, there was a sufficient amount

¹ See original article, p. 433.

of the liquor amnii. I have examined hundreds of pigs, and it is very rare to find one without the amniotic bags tense and full. I am glad Dr. Jaggard gave his conclusions. It struck me, while he was reading, that his would be one of the best recorded cases to show that the liquor amnii probably comes from the kidneys.

Dr. J. T. Binkley, Jr., read a thesis on

THE RELATIONS BETWEEN SALPINGITIS AND APPENDICITIS VERMI-FORMIS, AND THEIR IMPORTANCE TO THE GYNECOLOGIST.¹

Dr. F. Byron Robinson.—I am very much pleased with the paper. The best of diagnosticians will have difficulty in making a differential diagnosis between appendicitis and salpingitis. A very able diagnostician recently brought me a patient supposed to have had repeated attacks of appendicitis for six years. I examined the woman very carefully, and decided that the disease was probably tubal. At the operation the appendix was perfectly healthy; it was not attached, but lay against a pyosalpinx. I have examined about one hundred cadavers in regard to the appendix, and think that in about twenty-five per cent of women the appendix lies in the pelvis or just over its brim. Tait states that a great deal of tubal disease arises from infection from an adherent appendix.

As the result of the examination of about a thousand ovaries and tubes, I think the lumen of the left tube is larger than that of the right, and that therefore more infection will occur in the left tube than in the right. The left tube is affected in about seventy per cent of tubal disease. I believe that in every ease of pelvie disease on the right side the region of the appendix

should be carefully examined.

Dr. Binkley mentions reflex pain in the thigh. If the pain is reflex it must be from the obturator nerve, upon which the tube may press, and may in this way simulate hip-joint disease.

Appendicitis occurs four times as often in men as in women. The reason for this difference may be that Gerlach's valve is always narrower in men than in women, and that the appendix

in women can therefore more easily expel its contents.

I am glad that Dr. Binkley has written on this subject, for I believe that the gynecologist should be the abdominal surgeon, because he is the one who investigates all the time. The general surgeon will find that unless he studies abdominal surgery earefully and constantly, as a specialist, his work will be limited in this department of surgery. Prof. Richardson's opinion of appendicitis, as quoted, I believe is incorrect. Dr. Fenger is a very good statistician, and he states that only five per cent of all cases of appendicitis are fatal. I think that Dr. Richardson has been misled, like Dr. Murphy and others. These men make

¹ See original article, p. 474.

a specialty of this disease and see the most severe cases. The general practitioner treats all varieties of the disease, and many of the patients get better without operation. In a large experience of seven years I knew of only one patient, a boy, who died of appendicitis. Therefore I believe that the surgeons who make a specialty of this disease are mistaken.

Dr. Henrotin stated that I said that I had observed several hundred cases of appendicitis in seven years. What I said was, I had had hundreds of cases in general practice, and none of

them died of appendicitis but one boy.

To Dr. Jaggard's criticism I would say that I have made about seven thousand gynecological examinations—I did not mean that I had examined seven thousand different women—and I am convinced that it is a clinical fact that the lumen of the left tube is larger than that of the right, and that the left tube is affected twice as often as the right, and for these reasons: the sigmoid flexure lies over the ovarian vein, and, when filled with feces, obstructs the vein and dams back the plexus pampiniformis; the ovarian vein opens into the renal vein at right angles in nearly all cases, and the contraction and dilatation of the rectum keep up irritation in the left tube. These are the causes which, I believe, make this disease occur in the ratio of seven times on the left side to three on the right. The size of lumen of the left tube is a very important factor.

It is very important that the general practitioner should be able to recognize abdominal disease. I have advocated for years the establishment of a chair of visceral anatomy in the

medical colleges.

Dr. Franklin H. Martin.—I am interested in this paper. I wish I knew more about bacteriology. It seems to me that while our pathologists in the operating rooms examine gross specimens they should also make bacteriological studies. should follow the line of work begun by Roswell Park—that is, to have a pathologist present at every laparatomy with a number of prepared culture tubes, who should make bacteriological studies in every case, whether infected or not, in order to find out what bacteria, if any, are present, with the idea of getting at the etiology of these troubles in a strictly scientific manner. In a paper published last month by Eugene Hodenpyl, first assistant pathologist of Columbia College, he reported that in twenty-four cases of bacteriological studies of appendicitis—all he could find in all literature—the colon bacillus was found in pure culture in every instance. Besides these he has gathered eleven cases of his own, and the Bacillus coli communis was found exclusively in all except one, and in this case he found in addition the Streptococcus pyogenes. This makes thirty-five cases in all in which bacteriological studies of this condition have been made. He examined a number of cases of peritonitis in which appendicitis did not seem to be the cause, or in

which no intestinal lesions existed, and in none of these was the colon bacillus found. He also quotes Welsh as corroborating this statement. The same writer found the Streptococcus pyogenes in four cases of peritonitis of unknown origin, and in four cases of peritonitis following salpingitis he found in one case the Streptococcus pyogenes, and in the other three the Staphylococcus pyogenes aureus; while in three cases of chronic salpingitis without peritonitis no bacteria of any kind developed in the culture. Therefore it seems to me that we ought to have our pathologists in the operating room and get down to a basis of scientific work in these cases. If the colon bacillus was found we would take it for granted that there was intestinal infection; or if a mixed infection was found we could draw conclusions, after a large number of examinations, which ought to be of great value in determining the etiology.

There are conditions existing in women to cause appendicitis which do not exist in men. First, direct infection of the appendix from leaky tubes. Second, the results of adhesions with the appendix, caused by peritonitis from infected tubes; adhesions of the appendix produce tension and pressure, blood stasis results, and finally migration of bacteria. Third, pressure of tubal abscess, causing bloodstasis and bacteria migration; under this head comes pressure from tumors of all kinds, which lead to the same results. Fourth, constriction of long appendices

by tumors of the pelvis.

I have seen four cases of appendicitis associated with other pelvic troubles in the female. Case 1 had a large, double ovarian cyst in the right side. Four inches from the head of the colon I found a structure, which was pointed out to me by Dr. Byford, who was present at the operation. He said it was one of the ureters, and, as he left before the operation was completed, he thought I had tied off the right ureter. It was found, however, to be an enormously elongated appendix. It was traced down into the tumor, and around its imprisoned end was found an abscess. Perforation existed, and in the midst of the tumor were at least two ounces of pus. It would have been interesting to have made a bacteriological study of this case, with the idea of discovering the origin of the abscess. If it contained the colon bacillus alone it would have demonstrated that the origin was the appendix. If other bacteria were found in conjunction with Bacillus coli communis there would have been a question which only the examination of a large number of cases could determine.

Another case was a large abscess on the right side in a girl 18 years of age. It was enucleated with a great deal of difficulty, and the last point of attachment found was the appendix, which had become surrounded by this tumor. The appendix was removed; there was no infection of the opposite side. This seemed to me to prove that in this case appendicitis had infected

the tube, because if there had been infection from the uterus the left tube would have been more liable to infection than the right. This case was examined by Dr. Robinson, macroscopically but not bacteriologically, and his report was the same old story of specific infection; but the subsequent history of the case has demonstrated to me almost conclusively that there could not have been specific infection, because the woman has married since and borne a child. If there had been specific infection there would have been progressive infection of the other tube, and it is not likely she could have borne a child.

The third was the case just reported by Dr. Binkley. In this

case I should like to have seen a bacteriological report.

The fourth case was one very similar to the second case reported—a large pyosalpinx in which was incorporated the appendix. It was removed and the disease limited to the right side. In all probability in this case the infection was primarily from the appendix. It is a simple matter to make these bacteriological studies, and I should like to see it carried out systematically in all cases.

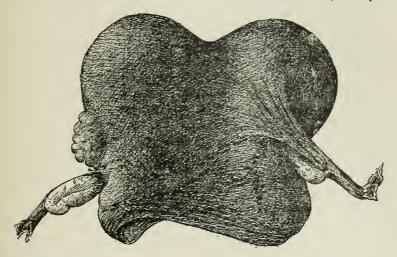
PRESENTATION OF SPECIMEN OF A PREGNANT FIBROID UTERUS.

Dr. Henry Banga.—This is a fibromatous uterus containing a fetus about four and a half months old, which I removed November 17th, 1893, by a supravaginal amputation. The patient gave the following history:

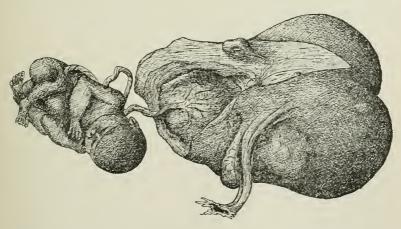
Miss L., 36 years old, single, began menstruating at 14, was always regular, and flowed for two or three days. The last menstruation was in the first week of July, some "show" dur-

ing the first week in August.

The patient was a slender, well-nourished blonde, and wanted to know why she was growing so large. She suspected pregnancy. Upon examination the introitus showed the cyanotic appearance, the vagina and cervix gave the doughy touch characteristic of pregnancy. Several small fibromata were felt in the lower portion of the uterus, behind the symphysis, and in the cul-de-sac of Douglas. The abdomen was enlarged by a tumor reaching nearly to the ribs, especially on the left side. My first impression was that a full-grown child was lying transversely in the uterus, but upon more careful examination I satisfied myself that I had to deal with a large, nodular, fibromatous uterus. There was no colostrum in the breasts, and no fetal heart sounds could be heard upon repeated examinations by different persons. Yesterday for the first and only time I could notice slight fetal motion; but the vaginal palpation was so characteristic of pregnancy, and the statement of the patient as to the cessation of menstruation seemed so truthful, that I told her she was pregnant, and that she had a tumor which, if left to full term, might put her life in great danger. I advised operation for the removal of the tumor, if possible with preservation of the uterus; if that was not possible, removal of the uterus. She consented to the operation, which I did this morning. I made an abdominal section. The incision extended two inches above the umbilicus. I rolled the uterus out, clamped



off the broad ligaments on either side, then separated the bladder and the rectum from the uterus. Then I transfixed the uterus in the region of the internal os by a needle, passed an elastic ligature around it, and cut it off above the transfixation



needle. I then sewed the pedicle to the lower angle of the abdominal wound, which I closed with silkworm gut. I preferred the extraperitoneal treatment of the stump to total extirpation, because the patient had a very narrow, almost virginal, vagina, which it seemed impossible to thoroughly disinfect.

You see here two large fibromata, of the size of two fists, embedded in the fundus, and about ten smaller ones, ranging between the size of a hazelnut and a small apple, scattered all over the uterus. I think that the examination of the uterus shows that its removal was indicated. Of course the tumors situated in the fundus might not have disturbed gestation or caused any trouble during parturition; but I think these fibroids near the lower segment of the uterus, behind the symphysis, might have interfered during parturition with the progress of the child through the pelvis, or have favored rupture of the uterus. But there is another point which I did not mention, but which really prompted me to resort to the radical procedure of hysterectomy. I did not know how long these fibroids had existed. The patient seemed entirely unaware that anything was wrong with her. She had never suffered any irregularity in her menstruation, nor had she noticed an enlargement of the abdomen, so I was inclined to think the tumors were "alive," having a tendency to grow. This being taken for granted, their early removal became imperative. Another reason why I secured the stump externally was that the patient had tachycardia—that is, she had a very rapid pulse each time I saw her, above 120; there was nothing to be found to explain it. I therefore considered the external treatment of the stump preferable, as being the quicker and safer method.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

EIGHTY-EIGHTH ANNUAL MEETING, HELD AT ALBANY, FEBRUARY 6TH-8TH, 1894.

HERMAN BENDELL, M.D., of Albany, President.

TREATMENT OF DEPRESSIONS OF THE SKULL OF THE NEW-BORN.

Dr. David D. Jennings, of New York, made a case in his practice the basis of a paper on this general subject. Unfortunately little attention had, as a rule, been given depressions of the skull in the newly-born, which not infrequently went on to produce hemiplegia, partial paralysis, convulsions, and so on. His own case was one in which the parents asked him forty hours after delivery to operate upon the child, but he first tried cups, to see if thereby the depressed portion of bone might not be raised; but as it did not succeed, he proceeded to trephine.

¹ The patient died on the fifth day of sepsis. § 19 This report includes only such parts of the proceedings as seemed appropriate for this JOURNAL.

The operation was simple, apparently without shock; no anesthetic was employed; it was not necessary to tie a vessel; the wound healed by primary union; there was uneventful recovery. He had been able to find but four other cases, among the operators being Dr. Sinkler and Dr. Smith; the result was successful, and infants were saved from paralytic and other symptoms. As to when we should operate, he said immediately if there were symptoms, or, if none, we might wait awhile to give Nature a chance, and perhaps the bone would rise spontaneously; if not, then operate and remove the deformity, and avoid subsequent changes and symptoms. Owing to its vascularity the trephined portion of bone would again become adherent.

Dr. Currier would be inclined to postpone an operation of this kind until he was quite satisfied that the condition, if left to Nature, would not remedy itself. Most of the cases of injury to the brain which he had seen, especially in the frontal region, had

proved fatal.

Dr. Coe had seen a large number of cases of fractured skull at the Chambers Street Hospital, New York—not in infants, however—but he had concluded that it was not so much the depression of bone as it was injury to the brain, vessels, or membranes which demanded operative interference. For instance, if there were effusion beneath the membranes, relief would not follow trephining unless the membranes were incised. The fact that symptoms often failed to develop until a time after the occurrence of depression also showed that they depended upon changes in the brain, vessels, or membranes, which, however, might not have gone on to develop had an operation been done at once. He preferred the chisel to the trephine, making a small opening through which the bone could be lifted.

Dr. A. M. Phelps referred to several cases of children with symptoms following injuries to the head at birth, which came to him later, and were trephined for the relief of symptoms which he believed would not have arisen had the physician operated and raised depressed bone at the outset. At any rate, the doctor should keep such infants under observation at least three months, and, should convulsions or symptoms arise, proceed to operate at once.

Dr. William Hailes showed a flat-faced rose drill with which he thought the depressed bone could be lifted and thus obviate the concussion attending the chisel and mallet, and objections to

the trephine.

Dr. Jennings said there was quite a difference between using the chisel in adults and in children. Regarding the drill, one writer had used a hook, sunk it into the bone, but did not succeed in lifting it. He believed depressed bone alone might cause symptoms without there being hemorrhage beneath the dura.

SENILE ENDOMETRITIS.

Dr. A. J. C. Skene, of Brooklyn, sent the paper. There was a general opinion that endometritis ended in recovery at the menopause, but Dr. Skene had seen it continue after this period, and a good many cases in which it had arisen subsequently. He had concluded, eighteen years ago, that senile endometritis was a distinct affection which deserved more attention; it was quite

different from the endometritis of earlier life.

In pathology senile endometritis might be limited to the cervix, but, as a rule, it involved the entire mucosa. It was usually suppurative, the discharge being sero-purulent, and when it began as a catarrh it gradually progressed to the suppurative form. The epithelium of the endometrium became almost entirely lost; granulations of low vitality sprang up; minute extravasations of blood were seen, with small pigment spots; atrophy of the muscular tissue was present, which caused inversion of the mucous membrane; laceration of the cervix was a frequent accompaniment; there was often partial or complete stricture of the os internum or externum; pus would be discharged and again accumulate. When the disease had existed long enough to destroy the mucous membrane, it might end in cicatrization, but it could hardly be called self-limiting.

As to causation, continuation of endometritis acquired before the menopause accounted for some cases. Some of the severer ones, involving the body of the uterus, were caused by displacement, especially retroversion, which interfered with the escape of the secretions. Stricture of the os internum acted in the same way. In the majority of cases the occlusion was the result of inflammation. Acute or latent gonorrhea might cause it, but he was not sure that he had ever seen acute gonorrheal inflammation after the menopause. Inattention to cleanliness might

cause it, also fibroma.

The first symptom to attract the attention was the discharge, and this varied according to the extent and stage of the inflammation. When there was interference with drainage there were more pain and constitutional disturbance. There might be slight chronic sepsis; digestion was interfered with; there was apt to be a dry, bronzed skin, suggestive of malignant disease. In cases of true stenosis the pain was acute and compelled the patient to rest in bed. The discharge differed from that of leucorrhea in being less tenacious; its color indicated, too, that it was sero-purulent. The differentiation from specific disease and malignant disease called for the use of the microscope. In adenoma there was menorrhagia, which did not occur in senile endometritis.

Treatment.—If confined to the cervix, use the douche of solution of borax or sulphate of zinc. If there were any prolapsus or other displacement, correct it. Medicated tampons

might be useful, also astringent and alterative applications, but causties would do harm. Better results would be obtained from boroglyceride tampons, tannin, and similar agents. Iodoform was most efficient when it could be freely applied to the interior surface of the uterus; he had only used the other agents because iodoform was more difficult to apply and because of its odor. Complete closure, if it existed, must be overcome; gradual dilatation was best, with subsequent drainage. The atrophied condition of the muscular structure would lead to tearing if rapid dilatation were attempted. Peroxide of hydrogen would be useful. The question had arisen in his mind whether total removal of the uterus would not sometimes be justified, but one should at least first try the treatment already referred to. Where there was complete prolapsus vaginal hysterectomy was the proper treatment.

THE TREATMENT OF ENDOMETRITIS.

Dr. Herman E. Hayd, of Buffalo, read a paper on this general subject. The treatment varied to some extent according to the form of the disease, whether acute, subacute, chronic, cervical or corporeal. The acute form was treated, as other forms of acute pelvic inflammation, by rest in bed, catharsis, and local measures. In infectious cases following labor, dilate (if dilatation were not already sufficient), curette, wash out, drain, leave in a suppository of iodoform. He was disposed to regard the intra-uterine douche as unnecessary if the drainage plan could be earried out. Chronic forms called for curettement and applications to the endometrium of iodine and other agents. In some cases of this form of endometritis intra-uterine galvanism was of benefit; but in its application, and in all forms of treatment, one should be as aseptic as possible and always provide for drainage after local treatment. The author alluded to the treatment of uterine inflammation complicated by tubal inflammation by the method advocated by Dr. Wylie, which included the use of a stem drain, and also by the method advocated by Dr. Polk, in which a gauze drain was left in the uterus after thorough curettement. Regarding the latter, he did not wish to say that it would always take the place of removal of the appendages, but he did believe that tubal inflammation was often cured, when due to endometritis, by treating the latter.

Dr. Willis E. Ford thought, with regard to galvanism, that it was useful in relieving endometritis when there was some fixation of the uterus which would be likely to lead to mischief if one attempted to carry out Polk's method (pulling the uterus down to pack it with gauze). He would therefore limit galvanism to eases in which there was some perimetritis with adhesions, but without pus in the tubes. The curette and tampon should be limited to cases in which there was no marked malposition or fixation.

Dr. Hayp thought electricity was useful where there were subinvolution and an open canal, but that it would do more harm than good where there were adhesions, on account of the amount of manipulation which it called for. Polk's treatment was attended by some danger, but not by much.

Dr. A. H. Buckmaster expressed the opinion that, while the uterus was most tolerant of curettage in some cases, it was a dangerous procedure where there was tubal disease. Speaking of senile endometritis with prolapsus, he thought hysterectomy

was indicated.

MENSTRUATION AND ITS ABNORMALITIES.

The discussion upon this general subject was arranged by Dr. Andrew F. Currier, who read a paper on the function of normal menstruation, referring to its occurrence in higher animals as well as in man; the fact that monkeys sometimes had a discharge of blood; the difference in time at which puberty manifested itself according to race or climate; the fact that the flow, while usually of three or four days' duration, might be much shorter or somewhat longer and yet be normal, and that irregularities as to constancy during a period did not necessarily indicate abnormality in relation to that individual. It was the duty of the family physician to take more precaution to instruct women with regard to care before, during, and after the menstrual period. The many errors which they committed should not be allowed to go on without our vigorous protest.

DYSMENORRHEA-ITS CAUSES AND TREATMENT.

Dr. Howard A. Kelly, of Baltimore, discussed this subject. Names often hindered knowledge of a condition. Dysmenorrhea was nothing more than pelvic pain associated with menstrual congestion and menstrual flow, and was a concomitant of a wide variety of diseases of the uterus, tubes, and ovaries. Dysmenorrhea was therefore merely an awkward name for a symptom of many common diseases, and it should never be entered upon the history sheet as the diagnosis of the case.

Dr. Kelly had made an analysis of this symptom in 400 cases in which he had opened the abdomen for pelvic disease. Of the 400 cases there was dysmenorrhea in 291, no dysmenorrhea in 109. Out of the 400 cases more than half (238) suffered from some sort of minor pelvic affection such as usually escaped the attention of the general practitioner. Out of the 238 cases named there were 168 in which dysmenorrhea existed, while it was absent in but 70. In addition to the 238 cases there were 53 with flexions, 41 of which had dysmenorrhea. The majority of the 41 sought treatment merely because of pain. Many patients had been treated for months and years for the dysmenorrhea. There was a small group with myomata which had been treated persistently on account of pain. It was of the

utmost importance that the profession should realize it was holding under treatment for dysmenorrhea or pain a vast number of women who had pelvic tumors and inflammatory disease. Years of fruitless treatment often went by before the real condition was detected and properly met. A common disease in

girls beginning to menstruate was chlorosis.

Speaking of treatment, Dr. Kelly wished above all else to emphasize the utter futility and the evil of using morphine. The only condition which justified it was that in which the dysmenorrhea had been demonstrated to be due to a gross pelvic lesion and the patient was undergoing preparation for its removal, or in which a fatal termination was not far distant. Never give morphine for a chronic disease not tending to a fatal issue.

In the dysmenorrhea of young girls, the hot hip bath, hot tea, emptying the lower bowel, would help overcome pelvic congestion and bring on the menstrual flow. Beware of beginning local treatment in young women; it rarely helped them, and once started was apt to be kept up indefinitely. If, however, dysmenorrhea was persistent, make a thorough examination under anesthesia—rectal first, not vaginal. Where there was no local lesion found, thorough dilatation of the uterus would often prove very valuable. About seventy per cent of the cases were helped by it for a time, forty per cent were benefited permanently, and ten per cent were cured thereby of the dysmenorrhea. Its best field was in cases distinctly spasmodic in character. Dr. Kelly had several times removed the tubes and ovaries recognized as healthy, for the relief of persistent painful menstruation. Gross lesions required treatment appropriate to the case.

PROFUSE MENSTRUATION.

Dr. Charles P. Noble, of Philadelphia, read this paper. It was assumed that profuse menstruation was synonymous with menorrhagia and too great loss of blood at the menstrual period. Among distant causes were cardiac trouble, cirrhosis of the liver, and Bright's disease. Local causes were pelvic congestion, endometritis, metritis, polypi, adenoma, fibroids, malignant disease, remaining products of conception, hematocele, cystic disease of the ovaries, etc. In young girls there might be lack of control, on the part of the nervous system, of both the vaso-motor nerves and special nerves going to the organs of reproduction. This was especially true of cases in girls "shooting up," growing too rapidly.

In married women a frequent cause was retained products of conception. Menorrhagia approaching the menopause was of serious import; about one-tenth of all cases of hemorrhage at this time were cases of cancer. Fibroids and other growths were often the cause about the forties also. It was a striking

fact that while menorrhagia in young girls was generally due to a condition of the nervous system, in young married women it was connected with pregnancy, and in older women with gross disease of the uterus.

In treatment, where the cause was constitutional or due to disease of other organs than those in the pelvis, such medicines as digitalis, strychnia, and ergot might be required. As to local measures, it should be remembered that there was no treatment of menorrhagia per se. The attending physician had sometimes allowed a case of cancer, for instance, to go to a fatal termination because of having made a diagnosis of menorrhagia and

directed his treatment to that as an entity.

Endometritis and metritis, when not complicated by disease of the uterine appendages, were most satisfactorily treated by dilatation of the cervix and careful use of the sharp uterine curette. Polypi should be removed and the endometrium be curetted; fibroids should be removed by vagina or by hysterectomy. If carcinoma were localized in the uterus, remove this organ. Remove products of conception. Hematocele was almost always due to ruptured extra-uterine pregnancy and called for laparatomy. Cystic degeneration of the ovary was sometimes the cause, and the organ should be removed. As to treatment by electricity, this was tedious and painful, and, if sufficient strength of current were employed to secure effect, it was not without danger. As compared with the curette, it was more painful, more uncertain, less satisfactory. Hydrastis canadensis had been used to some extent, but he had never been able to satisfy himself that it ever had the slightest effect in controlling uterine hemorrhage. There were two other methods to bridge over an emergency—viz., systematic rest in bed and the use of the vaginal tampon. Ligation of the uterine artery had been employed, and in acute anemia it offered much. Hysterectomy might also be called for on account of persistent hemorrhage in malignant disease, although this was not limited to the uterus.

The author said he had not mentioned treatment by caustics for the reason that he believed this method to be inefficient, dangerous, or both. The milder escharotics were inefficient; the more powerful ones were dangerous, because their action could not be controlled.

SCANTY MENSTRUATION.

DR. FRANKLIN TOWNSEND, JR., of Albany, read the paper. The cases which might properly be classed under this head were chiefly those of chloranemia. Much might be said regarding the cause, especially as to the influence of bad dress, confinement, close attention to books, and the customs of modern civilization. The treatment, of course, required correction of these conditions. In many cases the emotions played an important

part, especially jealousy and disappointment, which might be supposed to act through impoverishing the blood. The treatment by iron required more judgment than had usually been displayed. It might be preceded by salines with benefit.

Dr. Townsend summarized his paper thus: 1. Scanty menstruation is most usually the result of malnutrition in both young and middle-aged, married and single women. 2. The primary seat lies in the condition known as chloranemia. 3. Treatment must be directed in an intelligent way to correct this condition. 4. Treatment is to be persisted in if a permanent cure is expected.

IRREGULAR MENSTRUATION.

Dr. E. M. Cushing, of Boston, read this paper. As the subject was limited in such a way that he could not treat of profuse or of scanty menstruation, he was confined to the diagnosis between irregular menstrual flow and other vaginal bloody discharges usually supposed to be menstrual. He laid especial emphasis on the necessity of making an accurate diagnosis in all cases, and went over the various diseases which might cause hemorrhage at the menstrual period or at other times. These included extra-uterine pregnancy, inflammatory affections of the tubes and ovaries, fungous endometritis, polyps, subinvolution, fibroma uteri, ovarian tumors, uterine adenoma, carcinoma, etc. He also called attention to the various general diseases which. might disarrange the menstruation, such as sorrow, homesickness, phthisis, and other wasting diseases on the one hand, and heart disease, violent emotions, sexual excitement, etc., on the other. In conclusion, the author insisted that decided irregularities implied something serious and required a diagnosis. When that was made the appropriate treatment could be applied.

THE MENOPAUSE, NATURAL AND ARTIFICIAL.

Dr. Arthur W. Johnstone, of Cincinnati, treated of this subject in a very interesting manner. Much light had been thrown upon it, he thought, by what was called Stevenson's wave. From 16 to 45 (the child-bearing period) was the best part of one's life. After this age the tissues begin to undergo a retrograde change, the first positive mark of decay being a wearing out of the endometrium. The physical expressions of this and accompanying changes were hot and cold flashes, vertigo, bilious attacks, and so on. Symptoms existing previously, and attributable to an organ weak in some respects, now became aggravated. One who had had headache might now find it worse, one accustomed to attacks of diarrhea would find this more annoying, and so on. Would it be any wonder, in a family of hereditary taint, if the brain gave way under the strain? Some women reached

the harbor quietly and beautifully, while others came in stormtossed. Studied in the light of Stevenson's wave, the varied phases of the menopause could be well understood. The human being representing a vessel passing through a long voyage, the physician could only stand by and watch over weak points, stop leaks, throw oil on troubled waters, and carry the vessel to safe

anchorage.

When the pelvic organs became utterly useless, artificial menopause could be brought on by simply cutting the nerves which controlled the menstrual function. For Dr. Johnstone believed that the ovaries had nothing to do with this function; that it was under the control of a pair of small nerves, one entering the uterus under the tube on each side, and that cutting these off would put an end to the monthly flow. Certain cases were referred to going to support this view.

Dr. Edward N. Liell, of New York, read a paper on

URETHRAL CARUNCULÆ.1

DISCUSSION ON ABDOMINAL SURGERY.

The discussion upon this subject had been arranged by Dr. Albert Vander Veer, of Albany, and was participated in by several gentlemen from cities outside New York State as well as by members of the Society.

DISPUTED POINTS IN PELVIC SURGERY.

Dr. Joseph Price, of Philadelphia, read a paper bearing this title, in which he dwelt perhaps more upon failure on the part of some in the profession to carry out in the best manner wellrecognized procedures, than upon points which would be regarded as disputed ones by advanced members. One cause for the spread of faulty methods was the too prevalent medical journal, at least such as were intended only to act as advertising mediums of nostrums and anything which would pay for space. According to a French saying, all cats were black in the dark, and so were all names on paper. Often statements were given as facts which were pure fiction. Some said that pus in the pelvis or tubes was rarely dangerous per se, and on top of this it had been gravely stated that even if the tube were broken down by puriform degeneration, it might be preserved as an aid in the production of pregnancy. The authors of such nonsense, he said, failed to consider that such tubes were, by universal consensus of the best observers, made responsible for ectopic pregnancy.

There were some who thrust a needle through the abdominal

¹ See original article, p. 487.

walls without incision, and allowed the patient to walk home from their office, which certainly was a very rash procedure.

Referring to the leaving of pus, or sacs which had contained pus, he said that the pathological importance of pus in inducing disintegrating changes throughout the entire organism was too well understood by all present to be insisted upon. As to the original cause of tubal or ovarian disease, he was prepared to sustain the position that gonorrhea in the male was an important factor. Dirty midwives and retained placental débris had much to answer for. Catching cold might be put among the mythical

causes, unless it came upon an antecedent inflammation.

Does loss of physiological organization carry with it loss of physiological function? Yes. But, disregarding all analogical reasoning, the position was held by some that the tubes were an exception in this respect to all other organs. As to the aftereffect of removal of the tubes and ovaries, it was not to be decided by the experience of one operator. He believed that experience would show, on the whole, that in surgical cases the benefits were real and lasting, and often rescued the woman from a condition leading to death. Dr. Price also touched upon the question of drainage in pelvic surgery, which he resorted to frequently in pus cases.

INFLUENCES AFFECTING THE RESULTS OF ABDOMINAL OPERATIONS.

Dr. J. F. W. Ross, of Toronto, Canada, read this paper. In analyzing the results of one's surgical experience he found that they varied to some extent under conditions similar with regard to antisepsis and the success with which the operation itself had been performed, and when one sought an explanation for this variation in results he found none, unless it were the state of the air or some condition inherent in the patient. That the condition inherent in the patient might have something to do with it was evident from the fact that, if it were not so, all of those suffering from sepsis, other conditions being the same, would die, whereas we knew that some, in spite of a long struggle, came out victorious. The cases most likely to die after abdominal section were those in which there had been a septic condition during some time before the operation. The removal of simple ovarian tumors in patients with good health was attended with almost no mortality; but when it came to operating for suppurating ovarian cyst or pus tube, conditions were introduced in which the dangers were enormously increased, in spite of all washing out of the peritoneum, packing with gauze, in spite of all the drainage and antisepsis brought into use. In addition to these influences upon the results of abdominal operations, there was another which, while once regarded and supposed to be met by the carbolic acid spray, had for some time been overlooked. In the author's opinion surgeons had pinned

too much faith to antiseptics—not that we should cease using them, but that we should pay more attention than was being done to other elements influencing the operation. He had found that when the peritoneum was opened in a foul atmosphere, although antiseptics helped, yet there was a little peritoneal irritation and a little more abdominal distention than there should have been. The entrance of septic cases into a building where operations were being done had an influence for evil, but as to what might be the exact element in the air which caused it he was unable to say. There might be a peculiar odor which the nostril could or could not detect, yet a wound opened in such an air might detect in it some poison. The healthy peritoneum seemed to be more susceptible to a slight poison in the air than the unhealthy peritoneum. It was also possible that foul vapors were retained in the air by clouds and fog, which would account, at least in part, for the less favorable progress of operative cases during disagreeable weather. The author gave an instance where the wounds had not done well in the hospital, but after whitewashing the walls and using paint the trouble ceased, notwithstanding the same precautions had been taken before and after with regard to antisepsis of hands and instruments. In two different hospitals, in similar cases operated upon with like precautions, in one the death rate was seventy-five per cent, in the other seventeen per cent. The only way in which the difference in the mortality rate could be accounted for was in the atmosphere.

Referring to some details in operative procedure, Dr. Ross said drainage should be resorted to where there had been suppuration and adhesions or where the abdomen had been washed out. Where the tube was introduced to detect hemorrhage, remove it in a few hours; in the other cases leave it in perhaps

a few days.

The author had learned to believe less in the efficacy of purgatives for the relief of peritonitis following abdominal operations.

HEMORRHAGE AFTER ABDOMINAL SECTION: ITS PLACE IN STATISTICS.

Dr. A. H. Buckmaster, of New York, in a paper upon this subject, reported a case of fatal hemorrhage following abdominal section in his own practice, which he had supposed was a very rare accident until heafterward made inquiry among his friends, and learned of as many as fifty or sixty like cases which had not been reported. He did not, however, blame operators for not reporting such cases, for the reason that it might get them into the courts. The writer had also had a case of alarming hemorrhage four days after an operation upon the cervix uteri, which, had it been within the abdomen, would certainly have ended

fatally. He believed that hemorrhage in the abdomen gave no warning until the patient was beyond help. The value of drainage as giving warning against such an accident had been, in his opinion, exaggerated. A complete autopsy was also necessary in order to exclude death from hemorrhage where some other cause was not apparent. Dr. Buckmaster's case occurred in an unmarried girl from whom he removed an ovarian cyst, tying the pedicle in two parts and as a whole, in the ordinary manner, using heavy silk ligature. The patient was doing well until the third day, when, in the morning, she was found dead. The pelvic and abdominal cavities contained a large amount of blood, and there was evidence of commencing peritonitis. A portion of the broad ligament had slipped out of the constricting band of silk, which permitted of the hemorrhage. During the operation a small, dark tumefaction was noticed just beneath the stump, which made but a slight impression upon his mind until after the fatal issue, when he thought that this plexus of vessels might have enhanced the hemorrhage when the ligature became

The case taught him that when the abdomen was closed after laparatomy the work was finished for good or evil, and therefore nothing should be left undone in the first place which might call for regret later. If it was thought likely that the abdomen would have to be reopened, the patient should not be put in such a position that the pelvis would be higher than the diaphragm, otherwise the blood would settle under the diaphragm, where it could not be removed, and would set up peritonitis. Some operators had used the Trendelenburg posture while operating, without protecting the intestines, allowing blood to run down among the coils where it could not be washed out. In some cases there might be no hemorrhage until after the pelvis was lowered; therefore lower the hips before the final test of hemorrhage had been made.

The discussion upon these papers was then opened by Dr. Howard Kelly. He thought the right title had not been given Dr. Price's, for the points to which it referred were not disputed ones. It was the consensus of opinion that there had been great advances in abdominal surgery the last ten years, and, if that were so, there must necessarily have been corresponding changes of views on the part of men doing abdominal work. We could not advance without a material change of views from year to year.

As to drainage in abdominal surgery, it was true that was to some extent disputed, but Dr. Kelly believed surgeons were coming to the conclusion that drainage was a confession of incomplete surgery. While he had drained in forty out of fifty cases at the beginning of his work, he now drained very seldom, and never when he was certain of his technique and there had not been abdominal sepsis.

Regarding purgatives, he thought they had a definite place. Some cases did not call for them. Some cases of peritonitis following operation ran a rapid course and nothing was of avail. There was a class of abdominal cases in which there was evidence of a tendency to produce septic condition, and if they were let alone this would arise; here free purgation would eliminate the serum, take away the pabulum on which the germs might feed, and help toward recovery.

Dr. Kelly could not agree with Dr. Ross as to atmospheric agencies having much influence. The surgeon had been getting away from the idea of mysterious outside influences, doing well

to attribute the trouble as a rule to the fingers.

Size of the pus tube was not evidence of septic power. He had a microscopic examination made of the pus while the abdomen was yet open, and if streptococci or staphylococci were not present he would not think of draining. Regarding hemorrhage, he always went carefully over the field after getting through the operation, to see that the ligatures were all right.

Dr. Arpad G. Gerster, of New York, thought also that the points brought out by Dr. Price were not disputed ones. He did not like to see the motives of the profession called in question in a wholesale way. He believed that the position of those who insisted upon the utmost endeavor to arrive at a correct diagnosis before opening the abdominal cavity was unassailable, and that they helped to advance true science by restraining too enthusiastic operators, such as asserted, for instance, that it was a matter of no consequence to make a diagnosis until after the abdomen had been opened. These conservative men prevented fiery surgeons from taking positions from which they must afterward recede. The one protest which had been made by Dr. Price was against drainage of a pus tube and in favor of excision. But Dr. Kelly had emphasized the position in this regard, which Dr. Gerster felt he could not too strongly indorse. There were pus sacs the removal of which would be bad surgery; others the drainage of which would be bad surgery. Undoubtedly, he said, Dr. Price had fought for a good cause, but with very poor weapons.

Dr. Gerster thought Dr. Ross had overestimated somewhat the importance of aërial infection. Whenever there was a change of assistants—of the house surgeon especially—suppuration was apt to be met with, and it was very difficult to detect its exact origin. At any rate, whenever suppuration took place he was disposed to think that infection had been introduced by

himself, assistant, or nurse.

Regarding purging, he thought often much benefit had been attributed to this when the patient would have got well as quickly without it. If the intestine were once paralyzed, gallons of hot fluid might be introduced and the patient would not recover.

Dr. Charles P. Noble, of Philadelphia, found himself in accord with Dr. Price on the question of drainage. It was a most valuable agent. The statistics of gentlemen who believed in its value gave a mortality not half so high as those of gentlemen who did not believe in it. He was not at all in accord with the theory that the man who used drainage had done bad work, and that otherwise he would not have employed it. Of course the case must have been a bad one, for no one recommended drainage in, for instance, a simple ovariotomy. But abdominal surgeons did not encounter simple cases very often. Where sepsis was undoubtedly present he could not advocate drainage too strongly. He had personally watched about two hundred drainage tubes, and had not seen a patient injured by one, and was satisfied he had seen many lives saved by its use.

Regarding the sac, he advised its removal where this was possible. As to the difference in the behavior of cases which were apparently alike, he thought it was likely to be due to a difference in the character of the pus, this being more poisonous in one case than in another. It was not so much a question of atmosphere as some slip in the cleansing of the fingers, instru-

ments, or ligatures.

Regarding hemorrhage after abdominal operations, he had met with it in four cases, and it was an accident which might happen to all. Instead of the ligature slipping, it was more likely to be due to failure to include in it all of the ovarian artery. He thought hemorrhage could be recognized as taking place in two ways—namely, first, to put in a drainage tube; second, rapid occurrence of symptoms of shock. No doubt would exist where the drainage tube had been left in.

Dr. Joseph Price, replying to the criticisms upon his paper, said the gynecologist was not sensitive upon these points, and he regretted to see that the general surgeon was. In abdominal surgery about all pus cases under the age of 30 did well, or should do well, but above the age of 40 they constituted bad subjects. Quiet, non-active people, such as the Poles and some other foreign nationalities, bore operations badly. Negroes bore them well, and to the negro race gynecology was much indebted for material which enabled it to make vast improvements.

Statistics of results spoke well for drainage. This was true, not only of his own practice and that of Dr. Noble, but also of even Dr. Kelly before he dropped its use. Dr. Price doubted whether Dr. Kelly had better results now than formerly when he employed drainage. A gynecologist should have had experience in medicine and surgery before undertaking abdominal operations. Purgatives should be used wisely and thoroughly before operation, in which event they would not be required afterward. If used beforehand it was exceptional to have a distended bowel after abdominal operation; he had not seen abdominal distention after operation for a

year. As to hemorrhage, it was due to bad surgery, to imperfect material, especially to large ligatures which were hard to seat. He had heard a doctor say he could not remove all the tube. He should have gone to a Kindergarten until he could do it. Every now and then we heard a man say he did not use the drainage tube; another used gauze; another first made a microscopic examination. He supposed that might be called good surgery! Another man cleansed with a little water; he knew nothing about surgery: he should have flushed. Regarding leaving a pus tube or pus sac, he would ask Dr. Gerster whether he would trephine the femur on both sides and leave a sequestrum to come away, or would he remove this; would he cut into a dirty old bubo in the groin and wait for the glands to suppurate away, or would he do ideal surgery and cure the patient quickly? Failure to remove these things was timid surgery, and in saying this he allowed his motives to be questioned as it might please the hearer. Regarding opium, the man who had not learned how to do surgery without it had yet a great deal to learn.

Dr. Ross said he used purgatives before operation and also after. He wished to make the point that if infection had been introduced into the abdomen, purging would not get rid of it. He was convinced that there was something in the influence of air upon operations. Of course this was not excusing infection by fingers and instruments. He thought this was the beginning of a new era. Men had been taking out the uterus for prolapsus, had been doing this and that, things which once we had not dreamed of doing, and he thought we had gone so far that

more conservatism should now be counselled.

TRANSACTIONS OF THE NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, January 25th, 1894.

H. J. Boldt, M.D., Chairman.

Officers: Dr. Malcolm McLean was elected Chairman, and Dr. G. W. Jarman Secretary, of the Section for the ensuing year.

INCUBATOR.

Dr. Marx, in presenting a new incubator, said that in these

days of operative midwifery the necessity for such an instrument arose oftener than in the past. The one which he presented recommended itself on account of its comparative cheapness. It had been made by a pharmacist. It consisted of a box of suitable size, divided into two compartments—one for the child, the other for the alcohol lamp, boiler, and coil of pipe. Steam was generated by the lamp, or arrangements might be made to connect it with the steam-heating system.

CURE OF UMBILICAL HERNIA BY OPERATION.

The Chairman (Dr. Boldt) presented a woman on whom he had operated for umbilical hernia over two years ago, there having been no return. It was one of six cases treated successfully in the same manner. The method consisted simply in cutting out the entire sac wall, freshening the edge of the muscle, and bringing together the opposing walls by a single layer of unburied wire sutures. All the six women had been very stout, yet the sutures had held and there had been no recurrence.

PREMATURE ATROPHY OF THE SEXUAL ORGANS.

Dr. H. N. Vineberg had intended to present a woman in whom there was premature atrophy of the genital organs, but in her absence he briefly related the history. She was 25 years of age; had been married four years; had begun to menstruate at the age of 15, and menstruation had remained regular until eighteen months ago. Since that time there had been an interval of three, four, and five months between the periods. The appearance of the external genitals and of the vagina and uterus was that observed in a woman past 50 years of age. The patient complained of no special symptoms except those pertaining to the climacteric.

Dr. Francis Foerster read a paper upon

SMALL CYSTIC DEGENERATION OF THE OVARY,1

WHAT ARE THE INDICATIONS FOR A VAGINAL EXAMINATION?

Dr. E. B. Cragin read a paper in which he discussed the indications for a vaginal examination, a subject which he regarded as especially important to the general practitioner. By vaginal examination was not meant that other forms of examination were to be excluded at the time. His chief object was to call the attention of the practitioner to the need of being on the alert for symptoms pointing to disease of the pelvic organs.

¹ See page 145, February number.

In its bearing upon this subject life might be divided into three periods: that prior to marriage, that during marriage and

the childbearing years, that of the menopause.

Indication for a vaginal examination prior to married life seldom arose. Mothers were often worried because a daughter did not menstruate as early as other girls, yet, as a rule, an examination was not called for in such cases. Any evidence of lack of development in the genital organs or of atresia vaginæ in a girl about to be married should lead to an examination. There were some cases of dysmenorrhea of severe type which would not yield to medication and therefore required an examination. It was usually best to make a first examination under anesthesia in order to avoid pain and moral shock. Where women suffered from almost constant pain in the lower region of the back, the pelvic organs should be examined. In women of a melancholy disposition the mind should be, if possible, kept off of the pelvic region.

During married life, perhaps the first indication for an examination would be pregnancy. But it was a common practice not to examine the pregnant woman until one was called to the labor. This was wrong, for some faulty condition might exist which could be corrected or for which one could be prepared. Again, before the woman was discharged from the physician's care an examination should be made of the pelvic organs. A large number of the women who consulted him at Roosevelt Hospital had posterior displacement of the uterus, which might have been prevented by attention after parturition. He also believed it would soon become the custom to make an examination after the second or third month following parturition. Menorrhagia or metrorrhagia indicated a vaginal examination. The physician too often soothed his conscience by simply prescribing ergot or hydrastis.

The former indications, however, sank almost into insignificance alongside those pertaining to the menopause, a time when malignant disease was so likely to occur. It was too common a notion that the escape of fluid about the menopause was natural, and the fact that it was often due to malignant disease was therefore overlooked. Indeed, there was scarcely any period of life when we should not be on the lookout for cancer. The author mentioned a case seen recently, in which the woman having cancer of the uterus was 30 years of age; and the disease

sometimes occurred earlier.

DR. MALCOLM MCLEAN thought the physician should avoid extremes and not make a vaginal examination in every case of slight pain, and, on the other hand, not neglect on sentimental grounds to make it when indicated. The author had put the case plainly, and he hoped the warning would be heeded.

DR. VINEBERG thought an examination ought to be made two or three months after confinement, for it was very common for

women to say they had no trouble until some weeks following

Dr. A. F. Currier had thought some time ago that there were few cases in which a vaginal examination was indicated in girls, but a larger experience in this direction had satisfied him that the field was a larger one than he had at first supposed. Anemic, flabby girls suffering from menstrual troubles often failed to respond to medication, and on examining the pelvic organs either active inflammation was sometimes found or a displacement likely to lead to such inflammation. Make an examination immediately after labor to determine the existence of any tear, and repair it at once, and thus avoid the necessity for subsequent examinations and operations. It was important, as previous speakers had said, to make examination when there was the least suspicion of cancer about the menopause.

Dr. R. W. Murray impressed, as he had done years ago, the necessity for immediate repair of injuries after labor, and also for examination at the menopause when any signs pointed to

possible cancer.

DR. CRAGIN said he would not advise the general practitioner who had had no experience with trachelorrhaphy to repair the cervix immediately after labor, for he was liable to draw the sutures too tightly and to cause sepsis. It was different with the specialist.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI.

Meeting of December 14th, 1893.

The President, WM. H. TAYLOR, M.D., in the Chair.

Dr. Reamy presented a specimen of

INTRALIGAMENTOUS CYST—LONG RETENTION OF DRAINAGE TUBE AFTER OPERATION.

After the operation a glass drainage tube was inserted, which discharged from two to five ounces of blood daily. The quantity was but little diminished for seven days. Strangely, the pulse and temperature remained about normal. On the eighth day a small quantity of pus was discharged, the quantity of blood being much diminished. The drainage tube was now removed, and the closing sutures were removed the following day. The patient has made complete recovery. I invariably remove a

drainage tube if any pus appears, and in no case has any trouble followed.

Dr. Zinke.—I am glad to have heard the report of this case, since it corresponds nearly with a case I have had recently. In removing a distinct multilocular ovarian cyst I had a great deal of difficulty in making a pedicle, and subsequently there was considerable bleeding. The drainage tube was left in three days, and I was afraid I would have sepsis. The woman never had any temperature, and the bowels and pulse were normal. I let the opening from the tube take care of itself, and, to my great surprise, union took place at once, and the patient left the hospital within one day less than two weeks.

Dr. Hall.—Do you usually allow your patients to go home

within two weeks after operation?

Dr. Zinke.—Not as a usual thing, certainly.

Dr. Johnstone.—Within forty-eight hours a drainage tube shuts itself off so it is nothing but a sinus. I had one case die, some five or six years ago, which I believe was the fault of the drainage tube. It was a difficult case, but was very interesting in some respects. It started in as an ordinary puerperal fever, and I saw her on the tenth day and operated on the eleventh. The omentum was so thickened from septic infiltration that it looked almost like carcinoma. I put the curved drainage tube over the left side, and for thirty-six hours everything went beautifully: the serum cleared up and decreased to less than half an ounce in two hours. Then I should have taken it out, but instead I allowed the bowels to move with the tube in. After the movement the color of the fluid was darker, the second discharge was darker still, and the third one was terrible. It is unnecessary to say that in a very short time the woman was a corpse. My rule now is to get the tube out in eighteen or twenty hours. I have it emptied and kept absolutely empty, so that the peritoneum is as dry as it is possible for it to be. believing, as does Mr. Tait, that the drying favors clotting. With this rule followed you will find by the end of twenty hours there is very seldom more than a drachm discharged in two hours. When the serum gets down to a light pink, if I find the color increasing I take the tube out, for I am afraid the erosion down by Douglas' pouch causes it. I think we must regard the drainage tube, like the pessary or the crutch, as a necessary evil.

In reference to the point spoken of by the last speaker, of allowing patients to leave the hospital so short a time after the operation, I think it is well enough under certain circumstances, but my rule is never to let them go home inside of three weeks. It takes at least twenty-one days for the connective tissue to become strong; therefore I never allow them to sit up inside of

twenty-one days.

Dr. Edwin Ricketts.—I must take issue with the last speaker

in saying that in forty-eight hours the drainage tube is shut off, because I have had some practical demonstrations in which that has not held good. In one case, a woman æt. 68, I kept the drainage tube in nearly ten days-I had to do it-and I drew off several ounces every twenty-four hours; I had no pus to deal So I think it is putting it pretty strong to say the drainage tube is walled off in twenty-four hours and you are not able to drain with it. I heard the assertion made by Dr. Howard Kelly in Louisville, and promptly took issue with him. may be all right theoretically, but practically I have seen some cases which proved that it was all wrong. I think every case is a law to itself. There are some cases I drain and some I do not. In a case recently operated upon I allowed the drainage tube to remain thirty-six hours and have not regretted it. selected cases I look upon the drainage tube in the abdomen as the engineer does upon the "governor" in the steam engine while in motion—as an indicator. It is always necessary to be on the lookout for sepsis. I have taken the drainage tube out in two, three, and six hours, and I have never regretted having used it.

Dr. Hall.—The whole question of the use of the drainage tube we cannot discuss to-night, but I think every case must be a law to itself and be governed accordingly. I remove the tube usually within twenty-four or thirty-six hours, and very seldom do I have to leave it over thirty-six hours. I can recollect cases in which I left the tube five or six and even seven days, and I removed blood every day. We must do what seems best in each particular case. The presence of a little bloody serum does not matter, but if there is hemorrhage you will not know it until there is collapse, if you do not drain.

In reference to Dr. Zinke's letting his patient go home so soon after operation, I will say, on general principles, that I would not follow that as a routine plan, though there are certain circumstances which may compel one to give consent for the patient to go home. I do not believe it is best for patients to get up inside of three or four weeks, and it is better to keep them four weeks. We would then have fewer herniæ to sew

np.

Dr. Reamy.—I will not prolong the discussion except to reply to one point. I have been in the habit of taking the tube out as soon as the discharge is serous, without regard to the quantity discharged. I think it barely possible that there is any great advantage in taking out the glass and introducing the rubber tube. After the first day you can drain through the tube if it is half an inch from the bottom of the cavity; and I keep raising the tube a little each day, so there is no danger of its pushing through into the rectum. When I have to keep the tube in three or four days I have it raised an inch. Now, the objection to substituting a rubber tube for a glass tube is

this, that if the rubber tube is firm enough to go down to the bottom it is sharp enough and rough enough to do some damage, and I have been afraid it might break down the sinus wall, although it might go in pretty easily. I wish to make an acknowledgment to the members of the Society who advocate the drainage tube. In the last thirty-eight or forty operations I have done, save this one and yesterday, I have never used a drainage tube, and have stated that I never would use it. I have been in the habit of tying well and cleaning out well, and cleaning without drainage. This I did last summer in some very bad cases, each doing well. In this case, I believe if I had not put it in I would have lost the patient, and I was so intimidated that yesterday, in a case in which I had left the peritoneum very ragged, I again put in a tube.

PERFORATION OF UTERUS BY THE CURETTE.

Dr. Zinke.—This is the third case in which I think I have perforated the uterus in an operation. My first case was a hysterorrhaphy, in which an assistant lifted up the uterus while I was stitching it to the abdominal wall; she recovered. The second one happened only a month ago, when I made a curetting, and suddenly the curette entered to the hilt; that patient also recovered. But this case gives me more uneasiness, because I think it is more serious in its nature. It was an intra-uterine polyp, and the pedicle was about the thickness of my index finger. I brought the growth into view and could sweep my fingers around the os, and simply worked it with my finger; and then I thought I would eurette the stump, and to my surprise the curette went into the abdominal cavity. I filled the uterus with gauze and put the patient to bed. Upon examining the tumor I found I had taken out probably a quarter of an inch square of the peritoneum. She was operated upon this morning, and it has given me a great deal of uneasiness. The question in my mind now is whether, if there is any more trouble in this case. I would be justified in taking out the uterus.

HEMATOMA OF RIGHT OVARY-FIBROID IN BROAD LIGAMENT.

Dr. Edwin Ricketts.—A woman æt. 30, mother of two children, suffered from pelvic pain for two years. I found a mass on the left side and advised that the abdomen be opened, and three weeks ago yesterday I operated and found a hematoma of the right ovary, which I removed. The right ovary and tube were prolapsed and adherent. The adhesions were easily broken up. The tube and ovary were massaged and allowed to remain. Of course it is not time to report definitely as to results, but the pain, for the present at least, is relieved. I will make note of the case later on and report as to the results.

¹ The patient recovered.

The other case is a woman æt. 42, the mother of two children, and she has also miscarried. The last living child is now 14 years of age. Examination revealed a solid tumor on the left side. I found a condition of retroflexion and adhesion, and there was a fibroid as large as my thumb in the left broad ligament close to the uterus. I removed the appendages, and it was astonishing to see the uterus come up to its place. The case went along very well.

Dr. E. W. MITCHELL read a paper on

THE SPONTANEOUS EVACUATION OF TUBAL COLLECTIONS.

The writer solicited opinions as to whether spontaneous evacuation of tubal collections through the uterus may sometimes occur, and as to whether under favorable conditions an accumulation may be evacuated by catheterization of the tubes, as some have claimed. The synopsis of the case is as follows:

Mrs. X., wife of a lawyer, æt. 30 years; American, of slender build; health good prior to marriage, and menstruation normal; married eleven years. One year after marriage she had an abortion with retained placenta and pelvic inflammation, from

which she got up with shattered health.

The menstrual periods became extremely painful, and in the intervals she suffered from pelvic pain, backache, and vesical irritation. Three years later she had an attack of peritonitis, from which she barely escaped with her life, and with a morphine habit established from which she was broken with difficulty. Two years later (five years from time of first illness) she became pregnant. During the whole period of gestation she suffered greatly from pelvic pain, being bedfast much of the time. Her delivery was followed by another attack of peritonitis, but milder than the former. When she came under my care two years ago she had the usual history of the subject of chronic pelvic disease: inability to endure exertion, backache, weight and bearing down, a free leucorrhea, dyspareunia, nervousness, etc. The sufferings at the menstrual period were extreme, and accompanied by nausea and vomiting. During the second attack of peritonitis she had also been treated with morphia, but greater care had been exercised against its continuance in the period of convalescence; she had since had one or two hypodermics at the recurrence of each menstrual suffering. I, like her former attendant, yielded in the presence of her great pain and gave her a hypodermic of one-quarter to one-third grain of morphia on the first or second day of almost every menstrual period. She took no opiate, however, at any other time. The menstrual week was always spent in bed.

Physical Examination.—Patient rather emaciated; slightly anemic. Uterus somewhat enlarged, anteflexed, movement re-

stricted by adhesions; cervix lacerated; some ectropion; very

great tenderness to touch about whole vaginal vault.

On left side of uterus a mass, taken to be enlarged ovary and dilated tube; on right, very slight enlargement. Under a course of douches, tamponment, painting of the vault with iodine, etc., there was some improvement, but she remained a semi-invalid, sometimes up and about, again for days at a time confined to bed.

November 1st, 1892, she was taken rather suddenly with extreme pain in the left ovarian region, chilliness and a rise of temperature to 101°, a pulse of 120, and nausea and vomiting. The pain was paroxysmal and extreme. Bowels moved normally. Per vaginam the enlargement to the left of the uterus was much greater and the tenderness very acute. Large doses of morphia hypodermically were required to relieve the pain. Ice bags were applied externally, and sulphate of magnesia given. These symptoms lasted one week, after which the pain and fever gradually abated. On November 12th she was seen by me with Dr. Reamy, who concurred in the opinion that the mass (now apparently almost as large as the closed fist) was probably a tubal collection, and also in the opinion that the removal by abdominal section was urgently indicated. The patient and her husband agreed to the operation, and the time was appointed for the next menstrual interval. The next menstruation did not appear at the expected time. As there was an amelioration of symptoms and the tubal collection was less tense, it was considered safe to delay operation, especially as the failure of menstruation to appear for one, two, and finally three weeks gave reason to suspect pregnancy. The improvement in health was sufficient for her to be up and about the house a part of the time. After three weeks' delay menstruation came on and lasted one week. I called about a week later, not having seen her in the meantime, to examine and appoint a date for operation. I was much surprised to find she had gone out for a ride. A member of the family said she felt so much better that she had about decided to refuse operation, for the present at least. Returning on the next day, I learned from the patient that the relief from suffering and rapid improvement in her health dated from the appearance of a profuse muco-purulent discharge which had come on suddenly after the cessation of menstruation.

Upon examination the boggy mass beside the uterus was found to be reduced at least one-half; there was not the slightest indication of an opening in the vaginal wall, or of any pus oozing from any point of the wall, but there was a free muco-purulent discharge from the os uteri. From that time she rapidly regained health and strength, has never since had a dose of morphia at a menstrual period, although she still suffers considerably for the first two days and usually remains in bed at

least one day.

I examined her a few days ago. There is but little tenderness about the uterus; the uterus is not so freely movable as normal; the right tube and ovary I could not feel; the left ovary is very slightly enlarged; the left tube I could not differentiate; the mass at the left of the uterus is quite gone.

Dr. Hall .-- I have two specimens of pus tubes here, with suppurating ovaries, bearing directly on the subject. It was an exceedingly difficult operation, and in enucleating the growth I tore into the folds of the cyst wall. The tubes were about five inches long and as large as a man's thumb. If you examine the uterine ends of the tubes you will find no opening, yet I can introduce my finger into the tube as it enters the sac of the suppurating ovary. The fimbriated extremity is lost on the ovary, and by turning the ovarian sac inside out it will be seen to end upon the ovary like the large end of a horn. The woman from whom these specimens were removed was married five years and never pregnant, but had gonorrhea three or four weeks after marriage. She applied to a physician, who gave her directions for treatment for several months, but she had not been under a physician's care since. She went to bed two or three days at the time of her menstrual period, but never sent for a physician until this trouble. She never suspected that she had a tumor or pus in her abdomen. Suddenly she was seized with pain and sent for a physician. The following day he found her with a temperature of 103° and thought it a case of typhlitis. Soon, however, he was convinced it was not typhlitis. When I saw her she had been having sweats and chills. The next day I operated and found two suppurating ovaries as large as a pint cup, with double pyosalpinx. There is every indication that the pus in the sac is of long standing. We could not believe the pus would extend the ovary to this size in three weeks. By contamination of the ovary suppuration took place. A man cannot draw on his imagination to think this would be developed in three weeks, but we must believe she went around for some time, perhaps weeks, with the pus present. The hypostatic pressure would have had a tendency to force the pus into the uterus, yet it did not do so, for in one of the tubes we found no dilatation near the uterine end, and the other is only slightly dilated an inch from the uterine end. I think that these cases illustrate the fact that the tendency is not to empty into the uterus, and there must be some other explanation in these cases than an opening through the Fallopian tube. Dr. Zinke's case illustrates how easy it is to tear through the uterus, and the uterus in that case was comparatively healthy compared with a uterus where there has been pus in the pelvis for weeks, as there was in this case. I am not at all certain but these men who claim to dilate the tube through the uterus and drain pus tubes do make a hole through the uterus. I am not at all certain but that the case reported to-night by Dr. Mitchell would have been better

off if a section had been made. She now goes to bed part of the time during her menstrual periods, but she is in a position when at any menstrual period she is in danger of having an attack of peritonitis. She is likely to set up an attack by going up-stairs, going to a ball, or jumping out of a carriage. She is not well, and I am not at all sure but it would have been better

if she had been operated upon.

The second specimen was taken from a patient operated upon Monday last. The patient is a grass-widow, but she had cause for leaving her husband-he infected her with gonorrhea. Since then she has been conscious of the fact that she was not well, and for twelve weeks has been unable to hold a position as clerk, and ten or twelve days each month she was confined to bed. The physician could feel a little mass about the uterus, and thought she need not be operated upon. He treated her, and finally she went to another physician, who treated her and then sent her to me. I operated upon her. When she came to me she asked if she had pus. The right ovary is bound down by adhesions, and the left one is a typical pyosalpinx, as you see from the specimen; when inflated you will see it makes a perfeet letter "S." She had pus, judging from the symptoms, not longer than five months. I have very grave doubts, judging from my own work, whether even in the minority of cases it is possible to catheterize the Fallopian tubes through the uterus and empty them when distended with pus.

Dr. Zinke.—In cases of this kind do you take any extra preeautions to protect the peritoneum at the point where you separate the tube? When you throw the ligature around the uterus and cut off the tube you necessarily leave a part; what do you do

with it?

Dr. Hall .- I leave it clean: I do not put any drugs on it or

cauterize it. I drain.

Dr. Johnstone.—The emptying of the tube does happen, but I think the man is a goose who tries to do it. A corkscrew is just about the shape of the tube, and if it was made of cheese it would have the consistence of it; and any man who can pass a probe through such a thing as that is away beyond me. Last spring I had a stubborn case which I was thinking of curetting. I anesthetized the patient and found a mass I was unable to detect before. After getting the uterus up in its right position I put in a speculum, and, while I had a stream of water playing in the vagina, suddenly a stream of black, thick blood flowed from the uterus. I went ahead and curetted the uterus then and there, and the woman made a beautiful recovery. She did not have any temperature, and the mass disappeared.

Dr. Zinke.—I am fully prepared to place myself upon the side of the previous speaker in reference to the treatment of pyo- or hydrosalpinx. I would not attempt a dilatation of the

tubal opening at the uterine extremity, and certainly not at the other. But to my mind this subject brings up a very interesting one, a difficult one, which not only we meet, but the general practitioner, and that is, when is a case like that over, and when is it not? I have had a very trying experience, within the last two years, with a young woman who had an abortion committed upon herself about two years ago, which set up the most marked pelvic cellulitis I have ever seen. There was a distinct tumor the size of my fist, and there was distinct fluctuation. Now, the question was, did the infection enter through the lymphatics, or did infiltration take place through the tube? I had consultation in the case, and my consultant, who has had a vast experience with these cases and has seen a number of them recover, advised at the time to let the case alone. It ruptured spontaneously into the vagina, and she recovered. This recurred eight or nine times, so the whole of the left side of the vagina was riddled with openings, and when she recovered there was a swelling the size of a goose egg to the left of the uterus. She had the abortion committed because she did not want to marry with a fetus in her, and she married against my advice two months after the abortion, and returned in six weeks pregnant. The swelling existed throughout the pregnancy, and it worried me a great deal. Her labor commenced on the 6th of August. saw her the same evening she was very restless, temperature 102°, pulse 100; and I stayed an hour and watched her, and found the pains almost beyond endurance. I gave remedies for her relief and to assist in the dilatation of the os. The next morning she was no better, temperature $103\frac{1}{2}^{\circ}$, and pulse 115. Drs. Palmer and Mitchell were asked to see the case with me. The time which elapsed between my visit and their arrival had secured sufficient dilatation to admit the tip of the index finger. After consultation we decided to wait and see what might be accomplished. We gave morphia for the relief of the pain, an antipyretic to reduce the temperature, and copious hot-water injections. I had to chloroform this patient the whole of the next night. The process of dilatation was exceedingly slow. By 11 o'clock the dilatation was not complete, but nearly so, and we decided to deliver. She took twelve ounces of chloroform from the previous evening until 11 o'clock that merning. There was no accident, and only a very small laceration of the perineum, which it was not worth while to stitch up. temperature fell to 102°, and then it went down, until at the end of the first week the temperature was about 99°. Then it fluctuated for three weeks between 100° in the morning and 102° in the evening. The swelling did not seem to increase in size after the labor, and so I thought possibly she was the victim of chronic malarial poisoning. Suddenly the temperature went up to 107° and the pulse to 170. I was called at 4 o'clock in the morning. Dr. Whittaker was called in, and Dr. Mitchell saw the case again. Of course it was a case of sepsis, but where was the poisoning? There was no tenderness, and the uterus was freely movable. What were we to do? Dr. Reamy saw the case and advised the injection of peroxide of hydrogen, which stopped the discharge. It is now eighteen weeks since the labor. About ten weeks after the labor a swelling manifested itself over the sacro-sciatic foramina, and another at the upper angle of the right sacro-iliac synchondrosis. They both contained pus, with the Streptococci pyogenes in handsome quantities. Since then another swelling developed over the shoulder blade, and she had an abscess of the lung. From all these she recovered, and is still living. The temperature now is not more than 99½°, and it seems she is likely to get well after all. Now, in this case would it not have been better if we had opened the abdomen and taken this thing away when the original infection took place?

Dr. Reamy.—Dr. Zinke is frank and, in the main, accurate in his report of this case, but I think he unintentionally leaves the wrong impression as to a few points. It is to be inferred from what he has said that at the time I had the honor of consultation with him it was concluded that no operation should be done at any time. The facts were that, in addition to the originally local trouble—which was probably cellulitis, having followed an abortion—she had at the time of our consultation profound, acute general peritonitis. It was decided, therefore, that abdominal section would be hazardous. It was believed that without operation death was not imminent, and that it would be safer to postpone until the acute symptoms should subside, meantime watching to meet any emergency. Universal clinical observation shows the hazard of operating in the presence of acute

general peritonitis.

I saw this woman no more until after her subsequent parturient experience. The case was now a very different one. Two abscesses were discharging; the principal one was posteriorly above the crest of the ilium, the sinus extending up to the border of the scapula. It had no connection whatever with the pelvis or abdominal cavity. I advised injection of peroxide of hydrogen into the sinus. Under this treatment the doctor informed me that the discharge subsided. I am very glad to hear that the woman has very nearly recovered, for she was at that time in a most unpromising condition. That this woman had suffered from pyemia is unquestioned. That the present condition had any relation to her primary attack is not certain, although it may be possible. However, no opinions reached in the consultations which I had the honor to hold with the gentlemen could have had any responsibility in strengthening the connection.

Referring to the remarks of Dr. Hall in discussing the case reported by Dr. Mitchell, I would say that I have seen several

cases where pus drained from the tube into the uterus, complete recovery taking place. I would further say that under such circumstances it is wholly immaterial whether Nature accomplishes the discharge by following the tube or making an opening into the uterus alongside of it. Recovery is the prime object. It is alleged that Dr. Mitchell's patient is not well, that she ought to have been operated upon. This is pure assumption, which will

appear more fully when she bears children.

The gentleman speaks of the large number of women having leaky tubes. He speaks of the frightful mortality from ruptured pus tubes. I fully concur with the statement made by Goodell in his recent article in the Medical News, that in most cases the tube containing pus is hermetically sealed at the distal end. I further agree that pus tubes are a source of danger and ill health, and that in most instances, the diagnosis being made, they should be removed, provided the unpleasant symptoms continue. I deny, however, that this is so common a cause of death as alleged by the speaker. In forty years I have not seen five cases of death directly traceable to ruptured pus tubes. And I doubt if the gentleman's experience has been different. I will go further and make the statement, the truth of which cannot be controverted by the facts, viz.. that in the gentleman's own practice during the last five years more women have died after he has operated upon them for the removal of diseased tubes and ovaries, as a result of the operation, than have died among an equal number of women presenting the same symptoms of pus tubes and pus ovaries, in the same community, and who were not operated on at all. In making this statement I make no reflection upon the gentleman's operative skill. On the contrary, I assert that the same comparison will hold true of my own work or that of any other gentleman present. It is a principle and the exhibition of clinical truth that I seek.

My statements are intended to have universal application. The facts should deter no one from operating in properly selected cases. But they should deter from the reckless practice of condemning every woman who has a few weeks or months of occasional pelvic pain to abdominal section, under the delusion that she is liable to die from ruptured pus tubes if she steps

from a carriage to the ground.

Dr. Edwin Ricketts.—There are two ways of curing these cases. When they are trusted to Nature for a certain length of time, I say let Nature take care of them; then act from a surgical standpoint. I believe a greater number of women die from the results of gonorrhea than from syphilis. It has been my fortune to have to deal with four cases of pelvic abscesses with no pus in the tubes. In one case the woman had been an invalid for a number of years, and she had used morphine inordinately. When she was cured of the pelvic trouble she was

also cured of the morphine habit. I do not want it to go on record that I operate upon every one of these cases that consult me, but I do say there is legitimate pelvie surgery. So far as advocating letting Nature take care of all these cases, we might as well say that Nature will amputate a gangrenous leg and surgery should not step in and amputate it; we might as well say, when an artery is leaking, we should trust to Nature instead of cutting down on it and ligating it. Early curetting of the uterus for endometritis, and packing with gauze, promises a great deal, and the time is coming when a man who treats a female for gonorrhea will go further and make an examination of the endometrium, and if there is the slightest evidence of endometritis he will forcibly dilate, curette, and pack, and thus many a pus tube will be prevented.

Dr. Johnstone.—The discussion has wandered to a consideration of the differentiation between the different forms of pelvic abscess, and I will plead as my excuse for getting up the second time that one of the most valuable means of differentiation has not been dwelt upon. I refer to exploratory incision. The mortality rate of exploratory incision I do not believe is

more than one-fourth of one per cent.

Dr. Zinke.—Is it not claimed by some that there is no pel-

vic cellulitis?

Dr. Johnstone.—That is claimed by Price, but I think he is wrong. Such a thing as a chronic cellulitis I do not believe in. A swelling which continues for several months must have an epithelial growth to keep it np. There are, I think, of course cases of acute cellulitis, but a chronic cellulitis in my opinion would be a monstrosity. No structure can have a chronic inflammation in it unless it is epithelial, except it be tubercular in nature. Such a thing as a simple pure chronic cellulitis does not exist, but an acute one does. I think it is far safer and best, when we make up our minds to open an abscess, to be sure and know what we are about.

Dr. Hall.—One gentleman, while referring to Dr. Zinke's case this evening, has said there was no use of operating. That, to a certain extent, there was no use in operating I will grant. When the temperature was about 107° there was no use in operating, for she then had general sepsis. That was not at the time of labor, but about six weeks afterward. Perhaps I left the impression that Nature never drained the Fallopian tube through the uterus, but I did not wish to leave this impression, for it is not my belief. I reported a case in which pus did enter through this way, but I do not know that it emptied through the Fallopian tube, and this patient did die from pus in the pelvis. They generally die from leaky tubes; they do not often leak from the distal end, but the patients do die from peritonitis without a correct diagnosis being made. I have seen more than five cases die from general peritonitis

within the last five years, directly due to an accumulation of pus in the pelvis, and there is danger of their bringing on fatal peritonitis by going up-stairs, jumping out of a carriage, or dancing in a tight dress. I believe curetting and packing does good in selected cases. I do not believe the case reported tonight is past the danger point; no man can tell when she will have a fatal attack.

Dr. E. W. MITCHELL.—The case presented has been discussed pretty thoroughly. Any one who considers for a moment the anatomy of the tube and its relation to the uterus must see that a termination of this kind is one of the curiosities of Nature, and of course we cannot depend upon any such termination with

certainty.

Meeting of January 11th, 1894.

The President, WILLIAM H. TAYLOR, M.D., in the Chair.

PYOSALPINX.

Dr. Hall.—To-night I wish to show some specimens of especial interest, because the patients who were operated upon had acute general peritonitis, temperature ranging from 102° to 105°, and pulse 130 to 160, distended abdomen, chills, and profuse perspiration. In one case I was criticised for advising an operation. The time for operation was believed by some to have passed, but an operation promised a chance, and without

an operation the patient would die.

The first specimen, a large pyosalpinx and suppurating ovary, was removed from a patient operated on at Columbus, O., November 26th last. I saw her at 12 o'clock Saturday night, and the operation was made early the following morning. The husband denied having had gonorrhea, although his physician said he treated him for it a year or so ago. I do not know that the woman was ever infected in this way. There was fully half a pint of pus in one side of the pelvis. The pelvis was irrigated and a drainage tube inserted. An uninterrupted recovery followed the operation, and twenty days later the patient was able to be up, and is now thoroughly convalescent. After the end of five days the temperature was never above 100°.

The second case is that of a young woman who has an infantile uterus measuring about an inch and three-quarters. About two and a half years ago I made forcible dilatation of the uterus for dysmenorrhea, and then while the patient was under chloroform I discovered for the first time that she had an infantile uterus. She had been referred to me for relief from the dysmenorrhea. She is a strong, healthy-looking woman. At that time I could discover nothing wrong in the ovarian region, except the ovary on the right side seemed to be a little enlarged.

She was a poor girl, and I told her if she would remain in the city (which she did) that I would take her as a charity patient, and see what could be done by the use of galvanism to develop the infantile uterus. I used galvanism until July last; I was exceedingly careful not to infect her, always cleansed the vagina carefully, and used every known precaution. In July, after using a very moderate current, the next day she developed a severe attack of peritonitis and was very sick for two weeks. I used the galvanism with one pole in the uterus and the other on the abdomen, sometimes using the positive and sometimes the negative pole in the uterus. She recovered from the peritonitis after eight or ten days. I did not use any more galvanism. She went to the country, and while there had peritonitis again. She came back about December 1st, saying that she was in better health than ever before in her life. About December 14th she was taken with a pain in the side of the abdomen. She came to my office, and while there had a chill. After the chill her temperature went up to 1021°. I advised her to go home, telling her it would pass off in a short time. She did so, but came back the following day, saying she still had pain, and I gave her phenacetin in five-grain doses. Two days later she again came to the office and said she had a chill each day and had had a chill that day. I put her on the examination table, but could not outline anything owing to the extreme tenderness of the parts. She went on from worse to worse, and in a short time came to have chills at regular times, and I sent her to the hospital and operated, removing a suppurating ovary and a pus tube, as you see from the specimen. Whether or not the galvanism infected her I do not know, but I feel quite certain she never had gonorrhea. One side had no pus but was bound down by adhesions, and in the other side there was at least a teacupful of pus. This patient was in bed only about a week before the operation. She was in the worst of the peritonitis, was vomiting, and I could not get the bowels moved; she was exceedingly tender; the temperature was up all the time, and she had a rapid pulse. It looked as if she would die in a few hours. I have seen such patients, apparently no worse, die in twenty-four hours without an operation, and I believe each one of these patients would have died in a short time without an operation. When we know the cause of the peritonitis and can locate it, I believe we can save them by operating, and I believe the operation should be made.

Dr. Palmer.—I do not have anything to criticise about these cases; the specimens seem to have justified the operations, and they are clear specimens. I have but this thought in my mind in reference to Case No. 2 (that is the case reported as one of infantile uterus in which galvanism was employed). Judging by the remarks of the speaker, one would infer that he laid the blame on the galvanism in producing the peritonitis. In that I

entirely disagree with him. Although galvanism was employed, it must be borne in mind that other means were employed at the same time. The galvanism was utilized with a metallic electrode. The electrode probably did the mischief. There is not a doubt but that some septic material was inserted with the electrode. We sometimes see the same results when the sound is

employed.

Dr. Stanton.—I do not agree altogether with Dr. Palmer. I believe the peritonitis or inflammation in that case was to a great measure due to the use of the electricity, and I believe it is not the only case in which untoward results have followed the use of electricity. I believe it is always dangerous, and is frequently about as injurious to the patient as anything, and I believe that was one cause, if not the cause, which produced the trouble.

Dr. Hall.—While I was working in the Presbyterian Hospital this patient with an infantile uterns came under my observation and I made forcible dilatation. Later there was a little improvement and the uterns increased in size so it measured almost two inches. I followed the case up; she remained under my observation all this time for the purpose of receiving this treatment, and I could have seen her any day except when she went to the country. I thought it was a good case to test the electrical treatment. I assure you I took every precaution not to infect her or carry septic material up into the uterus. I am strongly inclined to the opinion that I had infected her. I operated under protest, feeling I was the direct cause of her acute peritonitis, yet the operation was the only thing which could be done. The presence of the pus in the pelvis demonstrated the necessity for the operation, and the patient's recovery its utility. I am as confident as can be that the cause of the pus was the manipulation of the uterus necessary in using the electricity. I do not say whether it was caused by the electricity or the instrument, but it was caused by one of them. The question comes up whether or not, in treating women for amenorrhea or delayed or suppressed menstruation, we should treat them and say to them that there is no danger. I believe there is danger from the use of electricity, if from no other cause than that of carrying the electrode into the uterus.

Dr. Palmer.—A physician may employ a sound or an electrode with great care as to insertion, and not producing any pain in the pelvis at the time, yet not be scrupulously cautious as to its absolute cleanliness. A sound or an electrode should not only be aseptic but antiseptic. Ten times more harm is induced, by the use of these metallic instruments for diagnosis and therapy, by septic infection than by tranmatism. The same laws

govern us with the curette.

DR. EDWIN RICKETTS.—A young lady, et. 22, unmarried, with an unruptured hymen, came under my observation two years

ago last May, suffering from attacks of pelvic cellulitis. The pain at the menstrual period was very intense. She had an infantile uterns, and it was suggested by one of my colleagues that it was a case for forcible dilatation, curetting, and packing with iodoform gauze. This was done. I cannot say I know the instruments were absolutely clean, but I do know the usual methods were used in cleaning them, and I am satisfied that the instruments were clean when I commenced the operation. The pelvic cellulitis which followed the operation was simply terrific, and afterward I had to remove the appendages, which were prolapsed and adherent. I must confess I think there is something in traumatism to be considered, and sepsis is not all that is to be feared. In the case reported to night of infantile uterus, while we cannot say that the use of the electricity or galvanism was the exciting cause, yet everything in the history of the case goes to prove that those agents will set up a condition of that kind. A case of a myomatous uterus was reported to the British Gynecological Association not long since in which suppuration and sloughing followed the operation, and the patient came near losing her life.

Dr. Hall.—I do not agree with Dr. Palmer that to have sepsis we must necessarily use dirty or septic instruments. The danger is of carrying in something septic from the vaginal canal. I had a clean electrode and did the operation just as I had done perhaps fifty times before, always with care, especially so in this case, because she was exceedingly nervous and tender; a current of electricity that I could not feel, would make her suffer great pain. I believe she was probably infected by carrying some dirt from the cervical canal into the uterus, plus the galvanism—one or the other, or both combined. She was a virgin, and there was no reason to believe she ever had gonorrhea. This inflammation and suppuration I believe was due to the introduction of the electrode or the electricity, or

both, and not because the instruments were dirty.

Dr. E. W. Mitchell.—May I ask the doctor to define a little more clearly what he means by saying the trouble was due to the electrode or the electricity?

Dr. Hall.—I do not know how the pus was produced, but know it followed the use of electricity, and I think it was

caused by it.

I have tabulated this case and reported it conscientiously, not kept back anything or added anything. I think the cause of the mischief was the electricity or the use of the electrode. I believe she is better off without her appendages. A case of infantile uterns of this age would probably not have conceived had she married, but would have had to suffer ten or twelve days out of every month. The pus was in a sac which I believe to be a suppurating ovary. I opened into the pus sac and found the pus trickling out of the sac over my fingers while removing it.

The specimens were not examined microscopically, but I have no hesitation in saying that this was the focus of the infection. The operation was made in December and the patient is now perfectly convalescent.

Meeting of January 25th, 1894.

The President, WILLIAM H. TAYLOR, M.D., in the Chair.

Dr. W. H. Wenning presented two specimens of unusual interest on account of their complications. The first was

A DERMOID CYST OF THE RIGHT OVARY.

This tumor, about double the size of a man's head, was removed from a woman 54 years of age. When this woman entered St. Mary's Hospital she was very much emaciated and presented evidence of having an abdominal tumor. She claimed that she had observed its growth only about three or four months previous to admission, although a medical friend subsequently informed me that she had consulted him at least six months before for the purpose of answering the question of pregnancy.

On examination it was found that the tumor filled the pelvis, was apparently cystic in character and independent of the uterus. I concluded that the tumor was ovarian, and was certain it was not uterine. The tumor was removed by abdominal section with the assistance of my confrères, Drs. George E. Jones and Thomas P. White. When the cyst was tapped just previous to removal, a light-brown fluid flowed from the tube, together with some flocculi resembling small pieces of fecal matter, but without any odor. The cyst was so completely enveloped by peritoneum that it resembled an intraligamentous growth, and in fact was enucleated in the same manner. The peritoneal adhesions were most intimate, but the intestines were not adherent, although lying close to the tumor on the right side. The tumor was shelled out completely with the fingers, and in a few places with the aid of the handle of the scalpel. No cutting instrument was used at any time during this part of the operation, and the intestines were carefully avoided. After having completely washed out the cavity a glass drainage tube was inserted and the abdominal wound closed.

The patient rallied well from the operation and was in a satisfactory condition for three days, with the exception of a somewhat offensive discharge issuing from the drainage tube. This was washed out half-hourly with a solution of peroxide of hydrogen, which appeared to correct the offensiveness of the discharge. On the third day an enema was ordered for the purpose of washing out the bowel. I was then informed by the nurse that the fluid injected into the bowel issued from the

abdominal end of the drainage tube as rapidly as it was thrown into the rectum. I could hardly believe the report, and concluded to examine for myself. Introducing the rectal tube, I found that when inserted to the distance of about sixteen inches from the verge of the anus the water poured out clearly from the tube, but withdrawing the tube slightly below this it seemed not to flow. I explored the rectum thoroughly with my finger, but could nowhere find an opening. It was evident nevertheless that there was an intestinal fistula somewhere, and, as the patient's pulse and temperature were steadily rising, it was thought best to reopen the abdominal cavity for the purpose of locating the fistula. This was considered the more imperative as the fluid withdrawn from the drainage tube had a slightly fecal odor. Early in the morning of the fourth day after the first operation, with the aid of the above-mentioned gentlemen and in the presence of Drs. Philip Fischer and Wade McMillan, I reopened the abdomen and searched the whole intestinal tract, without, however, being able to locate the fistula. I then requested one of the gentlemen to introduce his finger into the rectum of the patient whilst I passed my finger deep down into the pelvic cavity. At the distance of about two and a half inches from the anus I could distinctly feel his finger nail with the tip of my finger, with nothing but the peritoneal covering between them. In order to secure drainage through and through, and in the inability of finding any other communication, this membrane was easily pierced with the blunt point of a pair of forceps, and a rubber drainage tube carried through and out of the rectum, thus completing the abdomino-pelvic drainage. The patient, however, did not recover from the shock and died the following day.

Dr. Cameron, the pathologist of St. Mary's Hospital, made an autopsy about twelve hours after death. He also carefully examined the whole intestinal tract for the purpose of finding the fecal fistula, and was about to give up the search when he accidentally, in passing his finger through the severed end of the rectum from above downward, found an opening on the *posterior* wall toward the sacrum, at the distance of about three and a half inches from the anus, or one inch above the insertion of the drainage tube into the rectum. In this vicinity the tissues were very rotten and friable. According to the pathologist's opinion

this was the seat of an old abscess.

It is difficult to explain the entrance of the fluid from the rectum in this manner. At first I thought that there was probably a communication previously between the rectum and the tumor, which was somewhat explained by the masses, resembling fecal matter, found in the fluid of the tumor. Afterward I modified my view in this manner: In removing the tumor and dissecting off the peritoneum I had unwittingly raised the rectum from its attachment posteriorly and thus caused the opening.

The only thing to account for is how the fluid managed to get into the eavity from the posterior wall of the rectum.

The tumor removed was a dermoid containing bones, hair, and

a large mass of putty-like consistence.

FIBRO-CYSTIC TUMOR OF THE UTERUS.

The second specimen was a large subperitoneal fibroid tumor of the uterus, with a large cyst attached to one side of the growth containing about a quart of dark-brown fluid. The rest was perfectly solid. The whole tumor weighed thirty-five

pounds.

The patient from whom the tumor was removed was 39 years of age and had been conscious of the presence of the tumor for about six years. Two years ago a removal had been advised, but not heeded, because she hoped to have it dissipated by the aid of medicines. Finally, when she was unable to walk or stand, she concluded to have it removed. An examination revealed the whole vagina and uterus prolapsed, the latter organ, however, with the exception of elongation of the cervix, appearing normal. The tumor occupied the whole pelvic and abdominal cavities. Fluctuation could be felt readily in the substance of the tumor in the right hypochondriac region, but besides this free fluid was present also in the abdominal cavity outside of the growth. This observation, coupled with the information given by the patient that the tumor first appeared on the right side, rendered the diagnosis of cystic tumor of the

right ovary probable.

When the abdomen was opened the omentum was found attached to the tumor, its blood vessels very much enlarged and covered with small cysts. The tumor itself was of a bluish color, and large blood vessels, about the size of a goose quill, coursed over it. With the exception of a large cyst very much resembling the stomach in outline and situated in the right hypochondriac region, the tumor was solid throughout, and, after it was extracted with some difficulty, proved to be a large subperitoneal fibroid. Previous to removal the omentum was tied in sections, including all of the vessels that could be found. Owing to the frequent anastomoses this occupied considerable time. After ligatures had been placed on all the vessels the omentum was separated from the tumor, which was then eventrated. After a temporary clamp had been applied to the pedicle which sprang from the fundus of the uterus, the tumor was cut away. When it was found that the body of the uterus was not part of the growth, the pedicle was exsected from the uterus in the form of a wedge, the cut surfaces united by deep sutures of strong silk, and the peritoneum sutured over it by fine silk, carefully approximating the edges. An examination by an assistant through the vagina showed that the uterus and vagina had been entirely replaced. The cavity of the uterus

had not been entered. The abdominal incision, which had been about sixteen inches in length (although it extended only about one inch above the navel, owing to the enormous distention of abdominal walls below the umbilious), was closed, a glass drainage tube inserted, and the patient removed to her room. In the evening of the same day it was found that more than the usual amount of blood could be withdrawn from the tube, and as the patient's pulse grew more rapid and feeble it was evident that there was secondary hemorrhage. With the assistance of my friend Dr. George E. Jones I again opened the abdominal sutures and first examined the stump, which, however, was perfectly clean and free from blood. I turned out several large clots from the abdominal cavity, but was unable to find the source of hemorrhage until I had opened the sutures above the umbilicus, when it was found that the hemorrhage emanated from the retracted portion of the omentum. Either some of the vessels had been missed in the ligation or the ligature had partly given way. Both could easily have occurred on account of the degenerated condition of the omentum. It was once more carefully ligated and the abdomen closed. However, the patient never rallied, and died from the loss of blood.

TOTAL ABDOMINAL EXTIRPATION OF THE UTERUS FOR MULTINODULAR FIBROID TUMOR.

Dr. Zinke.—The specimen came from a patient æt. 34, single, and a virgin. It developed in the period, as far as known, of about nine months, and the symptoms were those pertaining to multiple myomata of the uterus. The specimen placed before you is intact—that is, the whole uterus is contained in it. I made the incision in the median line, carrying it from the symphysis pubis to above the umbilicus, the patient being at the time in the Trendelenburg position. It was a comparatively easy matter to eventrate the organ, and the broad ligament presented beautifully, better than I have ever seen it. I threw a ligature around on either side and separated the broad ligament. I then made an incision around the uterus, just sufficiently deep to separate the peritoneum anteriorly and posteriorly, which was easily done with my thumb, and after this was accomplished the hysterectomy staff was introduced. Dr. Stark's instrument was used, which in external appearance is the same as the one of Dr. Eastman, of Indianapolis; but Eastman's staff does not have a concealed knife, as this has. The instrument is introduced through the vagina and into the anterior or posterior cul-de-sac, as the case may be, and the knife is forced through into the abdominal cavity. After the knife has made its appearance it is grasped by a pair of ordinary long hemostatic forceps, and then the whole is drawn back, so the forceps remain in the opening made by the staff. Then, by forcible separation of the handles of the forceps, the tissues at the so-called utero-vaginal junction, where the vagina joins the cervix, easily separate almost up to the point where the artery enters the organ, so that it is a comparatively easy matter to put the finger around it. Then, by means of a short trachelorrhaphy needle, a strong thread is thrown around the artery, tied, and cut short. I brought the sutures together and made a perfect Lembert suture, and cut the ligatures short. Before I did this I filled the vagina with iodoform gauze and stitched the peritoneum over it. I left the gauze in five days. Her temperature never went over 99½°, and when I removed the iodoform gauze there was perfect union throughout. There were some granulations in the vaginal roof, which had healed over and become perfectly cicatrized in the first week. The operation was done five weeks ago, and the patient is now up and about. When I closed the cavity completely I was afraid I had done something which would cause me trouble. But the principal point in this case was the cutting short of all the ligatures and sutures, not a single one of them having given rise to any difficulty, and the absence of any anxiety or trouble which is usually consequent upon these cases when the ligatures are permitted to hang down in the vagina, or where the clamps have remained in situ, necessitating the frequent irrigation of the parts. All of this was absent in this case. This patient recovered with even less difficulty than a woman who had passed through an ordinary case of confinement.

RUPTURED TUBAL PREGNANCY.

Dr. Stark.—This specimen is the right tube, in which the rupture occurred. The sac is very distinct, and it seems to have encroached upon the ligament. The ostium abdominale is not closed. The fetus is at about the end of the third month; at least you see the head and neck are distinct, and, furthermore, that the sex is determinable, which of course is only possible after the third month. The placental attachment seems to be on the upper surface of the tube. I will briefly give the history of the case:

About five and a half years ago the patient came to me and wished to know why she did not conceive. I examined her and found a retroverted uterus. I corrected the retroversion, and within sixty days thereafter she conceived, and I delivered her afterward of a little girl. She came to me again about six weeks ago, with headache and backache, and, finding a retroversion, I re-elevated the uterus and introduced a pessary. She told me afterward, however, that she removed the pessary for fear she would conceive again.

The patient claims she had a normal menstruation October 22d. The rupture occurred January 10th. November 18th she had a slight "showing" of a few hours' duration, and there was a return on the 20th, which continued off and on for about

two weeks and then ceased. During these two weeks of metrorrhagia, which was not continuous, there was also a discharge of small clots. This was not associated with any particular pain or any other inconvenience. The patient had all the other symptoms of pregnancy, and had her morning nausea and distaste for meats. She considered herself normally pregnant, and was very glad she was expelling what she thought were the remains of the ovum. About two weeks prior to the rupture she was seized with a severe pain in the abdomen, and had returns of this pain four or five times in the two weeks prior to the severe symptoms of rupture. January 10th I received a telephone message at my office to come up as quickly as possible. When I arrived I was told she was seemingly in good health and had made preparations to go to a neighbor's, and had her hand on the door knob, when she fell in a faint. I found her in extreme collapse, pulse about 160, rapid superficial respiration, dilated pupils, evanosis, and a very distended and sensitive abdomen. I at once gave her a subcutaneous injection of morphia and atropine, and had the pleasure of seeing her rally in about half an hour, when I applied ice bags to the abdomen. I made a diagnosis of ruptured tubal pregnancy. She then developed a very severe general peritonitis. After the fourth day we got the bowels to move and she commenced improving. I then called in Dr. Johnstone, who concurred in the diagnosis of ruptured tubal pregnancy. After the severe peritoneal symptoms ceased we opened the abdomen and found a mass of blood, below which the ruptured tube lay. The disturbance of the blood clot in getting at the tube caused an enormous hemorrhage; the blood poured out of the cavity as though a faucet had been turned on. With the assistance of Dr. Johnstone, however, the tube was rapidly brought to the surface and ligated. The lower wall of the tube had given way, apparently, prior to the rupture above. The hemorrhage continuing after the first ligature was applied, it was found necessary to throw a second one lower down. This one cut through, the tissue being very friable, and a third ligature was placed below this, which finally stopped the bleed-She has made an uninterrupted recovery.

Dr. Zinke.—Did you notice any disposition on the part of the

peritoneum to exclude the coagula?

DR. STARK.—No; the ruptured tube was covered with clotted blood, and the coils of intestines in the immediate neighborhood contained coagulated blood in their loops.

Dr. White.—There was no circumscribed tumor before it

extended to the left side.

Dr. Zinke.—How do you account for the feeling of the tumor?

Dr. Stark.—It was a firm mass of coagulated blood.

Dr. Zinke.—Why do we in some cases have an encystment taking place after the rupture, and in some cases none? What

could bring about an exudation such as to cause the ovum to be surrounded by the thick membrane which we find at times? Does the rupture take place in the tube and the ovum remain intact, and the tissues of the tube simply stretch and still continne to surround the ovum, so that only a trifling hemorrhage takes place at the time, causing a circumscribed peritonitis; or is it that the rupture is extraperitoneal, between the two folds of the broad ligament? In a case I saw a year ago the diagnosis was extremely obscure, so much so that both the consultants doubted my diagnosis of extra-uterine pregnancy. I did not definitely express that diagnosis, but did not exclude it, stating it was either an extra-uterine pregnancy, an abscess in the broad ligament, or a pyosalpinx, leaning, however, to the extra-uterine pregnancy because of the discharge from the uterine cavity. this case the operation was postponed because one of the consultants stated positively that it was not an extra-uterine pregnancy, that it was only a pelvic cellulitis, and that she would get well if we would only give her time. But as time went on I felt more and more anxious for my patient, and felt something would have to be done. It grew at the rate of at least half an inch a day. It came up to the level of the umbilious, filling all of the left inguinal region. The consultant who expressed himself that it was only a pelvic cellulitis could not be present at the operation. Dr. Stark was present. When we opened the abdominal wall we found something similar to the tissue of the uterus. I could not separate it and preferred to cut into it. was a quarter of an inch in thickness, and we found it filled with over a gallon of material, in the midst of which we found a four and a half months fetus. In this case we left the wound open. The cyst was uniformly adherent, and we filled it with iodoform gauze; after a week we renewed the gauze, but after ten days she died from pressure necrosis in the sac, which gave rise to sepsis.

The diagnosis is at times exceedingly difficult.

Dr. Johnstone.—The fibroids represent to me two distinct and separate views of hysterectomy. One is most commendable; but I do think we have gone too far. With a tumor the size of the one presented to night I do not think one is warranted in doing such a desperate and dangerous operation. We know that hysterectomy is a great deal more dangerous than the removal of the ovaries and tubes. The ligation of the nerve trunks that lead into the uterns would certainly have starved the tumor. My experience extends to twenty or thirty cases, and I have never had a failure. Some of them have extended up to the umbilicus; this specimen would have just about filled the umbilicus and nothing more. A mass that rises above the umbilicus we cannot hope to cure by this method. Nothing but complete extirpation will cure edematous fibroids,

but the multiple fibroids may be cured in this way, and the low mortality makes this the safest of all laparatomies.

Dr. Zinke.—Price has taken out the uterus sixty-three times

without a failure.

Dr. Johnstone.—Yes; and Tait had a run of one hundred and forty-three successful cases, and then lost three inside of two months. I was there and saw them die. You must take the general average. For instance, I have not lost a laparatomy

for one year, but I may lose two or three in a month.

Dr. White.—I was at the operation performed by Dr. Wenning, and I must say it would have been much better for the patient had the appendages been removed two years before. In the first case I was satisfied that the patient would recover, and was much surprised when the nurse claimed there was a communication between the rectum and the tube. It was clearly visible that there was a very decided opening, for at first a quantity of fluid would appear, and then the water would simply roll out through the tube. I was a part in the consultation to advise the reopening, and the fact of there having been formerly a fistula did not occur to any of us, or at least to me. We were all pretty much of the same opinion. The termination was very unfortunate. But with regard to the second case, the omentum had simply become adherent, and when the patient left the table she was almost exsanguinated, and under the circumstances I hardly thought she would live and get well.

Dr. Ricketts.—In regard to the larger specimen presented by Dr. Wenning this evening, I agree with the doctor that the patient died from hemorrhage from the omentum. I think the best way to deal with it is to tie it in sections from one side to

the other.

Dr. Wenning.—I made eight of them clear across.

Dr. Johnstone.—Did you hold the clamp on while tying the ligature?

Dr. Wenning.—Only while tying it.

Dr. Ricketts.—In tying the omentum in segments, under such circumstances, the application of perchloride of iron to the edge is valuable, and I have seen cases and have used it, even after the ligature, with pretty good results. With regard to the operation resorted to by Dr. Wenning, of dropping the pedicle, I believe it is a risky procedure.

Dr. Wenning.—I left no pedicle at all; it was sutured.

Dr. Ricketts.—Even that procedure I think was risky. The patient, I understand, was very much emaciated, and I am rather of the opinion that, leaving out the bad results coming after bleeding from the omentum, the total extirpation in this case would have been better. I had one fibroid in which I left the pedicle; the fibroid was as large as my double fist, and afterward the ligature was taken out by the cervix, and, while

the result was satisfactory, yet I must confess I was uneasy for

a number of days.

In regard to the specimens of total extirpation presented by Dr. Zinke, I think he did the correct operation, notwithstanding the remarks of my friend on the right. The extirpation of these appendages in multiple tumors is not always as satisfactory as one might think in relieving pain or cessation of growth. And I agree, in regard to the edematous condition, that total extirpation offers the best results. As to the specimens presented by Dr. Stark, I can only say he is to be congratulated upon the result. And in reference to the dermoid presented. I believe it would have been better to have removed it rather than to have stitched its walls into the abdominal incision, and then to have packed it with gauze. In regard to the other case, I believe it would have offered the patient better chances to have packed with gauze, instead of using the drainage tube, and not given

any injections per rectum.

Dr. Stark.—With reference to the first specimen of Dr. Wenning, I will say I am heartily in accord with the plan adopted of putting the ligature as far down as possible and sewing up the remaining wound. It seems to me certainly much less heroic than the removal of the entire uterus. It further seems to me that a total hysterectomy was uncalled for, inasmuch as the uterus was in itself in a comparatively good condition. I have frequently seen Martin, of Berlin, split open the peritoneum and excise a myoma without any unfortunate results. In fact, I have seen him, while enucleating an intramural myoma, open into the cavity of the uterus. I remarked to one of the students near me that I thought he should have put in deep sutures first, but he simply put in a row of sutures, and the patient made a nice recovery. In the other case, I feel the method advocated by the previous speaker would have been a better one—namely, that of packing with gauze, in the hope that the hole in the rectum would have been closed up by plastic exudation. If it had not been closed up the general peritoneal cavity would have been cut off, and the worst that could have happened then would have been a fecal fistula, which could have been cured at some other time.

Dr. Palmer.—It makes a great deal of difference what part of the intestine we open in these cases of laparatomy. I do not see where anything better could have been done in this case than to have opened the abdomen, washed it out, and packed it with iodoform gauze. The exact site of the opening was inaccessible. Certainly you could not have depended on Nature's method to restore the opening. I once had a case, some years ago, where peritonitis set up after an ovariotomy. I opened the abdomen to drain it off, and three or four days afterward some fecal matter commenced to flow through the incision. All I did was to keep her clean and give some general medi-

cation. It continued oozing some for nearly a year, but finally closed. I believe that where any of the smaller intestines are subsequently opened and adhesions form to prevent the entrance of the intestinal matters into the peritoneal cavity, Nature will in time effect a cure. Several cases have occurred, and I believe they all have been cured. All that is necessary is to keep the fistulous tract scrupulously clean.

Dr. Ricketts.—I would like to ask Dr. Wenning if, in opening the abdomen the second time in the case of the dermoid

cyst, there was any fluid in the cavity.

Dr. Wenning.—Yes, water. From the fact that water flowed immediately through the drainage tube when the rectum was irrigated, we thought the opening could not be far from the sigmoid flexure, and we naturally supposed we could find it and maybe save the patient's life. If we had had any idea the opening was posterior and probably the result of an old abscess, why, we would have let it alone. It was with a good deal of hesitation that I opened the abdomen. Of course it is always easier to formulate our opinion after we have made a post-mortem than before.

Dr. Johnstone.—The case I last reported to this Society I will never forget; it was one of the hardest cases I ever had. Within thirty-six hours the discharge was clear pink, and if I had it to do again the glass drainage tube would come right out. When the serum gets down to a drachm in two or three hours I would pull out the glass tube and keep it out. I am sure the mechanics of the tube was what did the harm in that case. Within thirty-six hours the fluid had become serous, then it got dark again and almost black, like venous blood. There is a danger in leaving the tube in, and it is now very seldom I do not remove it in twenty-four hours. I believe if you will stick to your tube, and have it emptied every half-hour, you will get rid of it much quicker than when you let it go an hour, or two or three hours, before emptying.

Dr. Wenning.—The drainage tube was emptied every fifteen minutes. It was found the fluid was not clear serum; it was a brownish fluid with a peculiar odor. The growth was not attached to the anterior wall of the intestine at all; it was attached to the peritoneum, of course, and was shelled off. The

drainage tube was carried down back of the uterus.

Dr. Zinke.—My tumor extended to probably an inch below the level of the umbilicus. I know Dr. Johnstone's views on the subject, but I have never seen a case in which a myoma of the uterus, interstitial, subperitoneal, or in any form, was cured by the method he describes. I have performed the operation in that way and the patient suffers still. As to removing the ovaries alone in these cases, I think it is not good practice to permit so large a tumor to remain. I think it is trifling with our patients. So far as the danger is concerned, I have lost so far not a single case of total abdominal extirpation.

TRANSACTIONS OF THE WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY.

Stated Meeting, Friday, December 2d, 1892.

The President, D. W. Prentiss, M.D., in the Chair.

Dr. G. P. Fenwick read a paper on

PLACENTA PREVIA, WITH A REPORT OF FOUR CASES,

in which he advised expectant treatment until after the period of viability, unless hemorrhage should be very profuse. During labor he would turn or apply forceps if the os were dilated, otherwise he would advise the use of the tampon to secure dilatation.

Dr. William M. Sprigg.—I think the doctor is to be congratulated on the results obtained in the first, second, and fourth cases he reports. Considering the rarity of this condition of placenta previa, he has had quite a large percentage in his private practice. The third case reported might have been managed differently. The better practice in such a case is to deliver as soon as the diagnosis is made out clearly. At the time of actual delivery, the next day, instead of tamponing the vagina in the case of placenta previa centralis and leaving delivery to Nature, the placenta should have been perforated or pushed to one side and version performed at once, and the fetus allowed to act as a uterine tampon.

The definition of placenta previa has not been improved upon

in its essential features since as long ago as 1776.

Hart gives the following definition of placenta previa: "The placenta is previa when attached in part in the lower uterine segment, or when so placed that a part of it during labor falls below the contracting ring."

Dr. Edward Rigby, in an essay published in 1776, writes of placenta as previa when "it is fixed to that part of the womb

which always dilates as labor advances."

Frequency and Causes.—Johnson and Sinclair found one case in five hundred and seventy-three deliveries; Rugby, in his one hundred and eight cases of flooding, states "forty-two were produced by separation of the placenta, occasioned by its being situated on the os uteri"; Hecker, one in four hundred and ten; Galabin, one in five hundred and seventy-five; the combined statistics of Schwartz, Schwörer, Hegar, and Spiegelberg, one

in eight hundred and fifty-two. Spiegelberg regards the proportion as one in one thousand, and six times as frequent in multiparæ as primiparæ, more frequent in the poor than the rich, and in rapidly recurring pregnancies.

The mortality statistics of Depaul are as follows: In twentyfive cases of central insertion, fourteen deaths; in thirty-one cases of partial insertion, three deaths; in fifteen cases of lateral insertion, no deaths. The treatment advised by Lomer is prob-

ably the best.

Dr. J. T. Johnson said that he recalled four cases of placenta previa that had occurred in his practice, one of which died. He was engaged with another case when he was sent for to see the lady, who was six months pregnant and was having hemorrhage. Dr. J. R. Bromwell saw the case for him, and found that she had lost about a quart of blood. The doctor tamponed her, and when he arrived she was much exhausted. He immediately proceeded to turn and deliver, which was accomplished without difficulty; but the patient died within an hour. His experience was remarkable, in that he had a second case the same day. In this instance he turned the child and waited for Nature to complete the delivery, which was accomplished with safety to both mother and child. In the treatment of these cases we are inclined to be too hasty in delivering. In forcible dilatation there is danger of laceration of cervix, and fatal hemorrhage might occur from this vascular area, and laceration would increase the danger from septic infection. It was better to turn by inserting two fingers into the uterus and using external manipulation, and leaving the rest to Nature. As soon as the diagnosis was made we should begin to empty the uterus at once. He would not regard the period of gestation, as the child was likely to die anyhow.

Dr. A. F. A. King said that in the treatment of placenta previa bipolar version should be accomplished as soon as the fingers could be gotten into the cervix. He said that there was a recent method by which a diagnosis of placenta previa could be made, even before the finger could enter the cervix. This was done by external manipulation, in which the head of the fetus was felt to be covered by a soft, doughy mass. Where a tampon was necessary in these cases he used iodoform gauze.

Dr. H. D. Fry said that the results in placenta previa depended much upon whether the insertion was central, lateral, or marginal. In central insertion the larger proportion die. As to the treatment, in some cases where the insertion was marginal, the head being engaged, he thought it best to rupture the membranes and wait for Nature, or bring down the head with forceps. If the insertion was central it was important to turn at once. Dr. Murray, of New York, reported a number of cases in which he made the diagnosis of placenta previa at the third and fourth months by the method referred to by Dr. King, by the

peculiar boggy feel detected over the insertion of the placenta. He thought the mother might have been saved in Case No. 3 had the doctor acted promptly. He would use Barnes' bags until sufficient dilatation was accomplished, turn, and leave to Nature. He thought it would have been better to have turned in the early stages of the case he saw with Dr. Fenwick.

Dr. W. M. Springs said that he had been called to a case in the fifth month of pregnancy where the woman had been having hemorrhage for eight weeks. He advised immediate delivery, and was preparing to deliver, having called counsel in the case, but Nature was competent and accomplished delivery

without aid.

Dr. A. F. A. King said he thought Drs. Johnson and Fry were mistaken as to Lomer's method. He did not leave it entirely to Nature, but delivered slowly.

Dr. H. D. Fry said that Dr. King was probably right, but not much assistance must be given, only gentle traction used.

The point was against much traction.

THE PRESIDENT called attention to his report of five hundred cases of labor, among which had occurred four cases of placenta previa. There were two fatal cases. One died before his arrival and the other was in articulo mortis. One recovered completely. The diagnosis had not been made in either of the fatal cases.

Dr. G. P. Fenwick said, in reply to criticisms of Case 3, that he had the counsel of two physicians, and, as there was no hemorrhage, they waited. In Case 4 Dr. Fry was of counsel in that case, and it was thought best to wait, as hemorrhage had ceased.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

The Annual Meeting, held February 7th, 1894.
The President, G. E. Herman, in the Chair.

The following specimens were shown: 1. Dr. Probyn Williams: Abscess in anterior abdominal wall in connection with the bladder. 2. Dr. Boxall: Fibroid removed from the uterus fifteen days after delivery. 3. The President (for Mr. W. Grogono): Acardiac acephalous fetus. 4. Dr. William Duncan: Tubal gestation of nine weeks' duration removed successfully three hours after rupture.

DR. G. ERNEST HERMAN was re-elected President for the coming year, and DRS. WILLIAM DUNCAN and RADFORD DAKIN Honorary Secretaries.

THE PRESIDENT then delivered his

ANNUAL ADDRESS.

Dr. Playfair in felicitous terms proposed a hearty vote of thanks to him, and that he should allow the address to be printed and published in the Society's Transactions. This was seconded by Dr. Watt Black and carried by acclamation. Votes of thanks were also given to the editor of the Transactions and to the retiring officers.

REVIEWS.

AN AMERICAN TEXT BOOK OF GYNECOLOGY, MEDICAL AND SUR-GICAL, FOR PRACTITIONERS AND STUDENTS. BY HENRY T. BYFORD, M.D., J. M. BALDY, M.D., EDWIN B. CRAGIN, M.D., J. H. ETHERIDGE, M.D., WILLIAM GOODELL, M.D., HOWARD A. KELLY, M.D., FLORIAN KRUG, M.D., E. E. MONTGOMERY, M.D., WILLIAM R. PRYOR, M.D., GEORGE M. TUTTLE, M.D. Edited by J. M. BALDY, M.D. With 360 illustrations in text, and 37 colored and half-tone plates. 713 pages. Philadel-

phia: W. B. Saunders, 1894.

This book has been written by ten gynecologists who are professors or adjunct professors in medical schools or attending or assistant gynecologists in hospitals. The editor has attempted to merge into a harmonious whole the work of these ten authors. The subject of gynecology is completely covered, but occasional repetitions occur which are probably due to the poly-authorship. The value of the work has been greatly increased by the introduction of sections on technique and after-treatment in gynecological operations, and on genital tuberculosis, subjects which have not heretofore received separate, individual consideration in the text books on gynecology. The illustrations are numerous and, with few exceptions, excellent. The index is complete. The book is well printed, in large, clear type, on good paper, is strongly bound, and reflects credit upon its publisher.

Examination of the Female Pelvic Organs occupies thirtyeight pages. The subject is necessarily elementary. It is exhaustively treated, but is unduly lengthened by consideration of uterine elevators and tents, and Ferguson's speculum, which should long ago have been relegated to the department of ancient history of gynecology. No one familiar with Sims' position would recognize the position shown in Plate IV. as such.

The Technique of Gynecological Operations is described with great care, accuracy, and minuteness of detail. If the rules laid down in this section are generally adopted, the unnecessary infec-

tion which too often follows gynecological operations will be abolished.

Menstruation and its Anomalies, Sterility, and Anomalies of the Female Generative Organs, are clearly and concisely considered.

Nineteen pages are devoted to Genital Tuberculosis, and constitute a valuable contribution to the literature of gynecology.

The section on Diseases of the Vulva and Vagina contains what is usually found upon this subject in the text books. Little advancement has been made in this department during the last decade.

The chapter on Inflammatory Diseases of the Uterus gives all that is definitely known on the subject. The greater part of this section is taken up with endometritis, and shows the great

advances made in the treatment of this disease.

The author of the section on Lacerations of the Soft Parts is singularly unfortunate in his choice of a title. Are the "cervix uteri," "recto-vaginal septum," and "perineum" the only "soft parts" of the female genitalia? The meaning of "old incomplete tear" "of the soft parts" is, to say the least, indefinite. The author apparently does not consider "incomplete rupture of the recto-vaginal septum" as "laceration of the perineum," for under the latter heading he describes only complete rupture of the perineum. The obscure notions of the profession in general regarding incomplete tears of the recto-vaginal septum would be elucidated by the general adoption of the term "relaxations of the vaginal outlet" which the author uses to describe this condition. Incomplete tears of the recto-vaginal septum cause symptoms only by reason of the relaxation of the vaginal outlet. Emmet's operation is given its proper position, as it is the only operation which relieves this condition. The employment of silk sutures in the rectum in the operation for the repair of the recto-vaginal septum is bad practice because of the danger of infection, and because their removal is attended by difficulty, pain to the patient, and danger of separation of the united surfaces. The use of the finger in the rectum during operation on the so-called perineum, as advocated in the text, is to be deprecated. Although this section contains much that is good, as a whole it is unsatisfactory.

The preparatory treatment of vesico-vaginal fistula, under the head of Genital Fistulæ, is incomplete. It is difficult to understand why the lithotomy position is advised in operations for vesico-vaginal fistula, because Sims' position permits a clearer view of the field of operation and greater ease of manipulation than is possible in the dorsal position. The author is apparently unfamiliar with silkworm gut as a suture material, as he advises the employment of "a silk loop as a carrier." Figure 205, page 274, either depicts a recto-vaginal fistula or is inverted and faulty. Those who have had the greatest amount of operative

experience in vesico-vaginal fistula will not agree with the statement on page 275 that "under no circumstances should a sigmoid or other catheter be placed in the bladder for permanent drainage."

The section on Distortions and Malpositions probably contains more inaccuracies than any article which has been published upon this subject. The following extracts and comments well

illustrate the inferiority of this section:

All anteflexions are divided by the author into simple anteflexions and anteflexions with retroversion. No attempt has been made to differentiate between physiological and pathological anteflexion, and all anteflexions are considered pathological.

Page 278: "These uteri" (anteflexed) "are found high in the pelvis." In fact, the pathologically anteflexed uterus is fre-

quently low in the pelvis.

Page 279: "The sound shows the depth of the uterus to be normal." The pathologically anteflexed uterus is often much increased in size.

Page 279: "The endometrium is usually atrophied." The

contrary is usually true.

On page 280 the author infers that the menstruation is scanty. Menorrhagia is, however, a frequent symptom of pathological anteflexion.

Page 280: "It" (the cervix of an anteflexed, retroverted uterus) "is always hypertrophied, and may even be so long as to project from the vulva." In the anteflexed, retroverted uterus the cervix points upward and forward. How can it, then, project from the vulva?

Page 280: "The condition is really one of hypertrophied cervix bent upon the body, with possibly some retroposition and descent of the latter." How can there be retroversion without

retroposition of the uterus?

Page 280: "The greater the hypertrophy the more the descent and backward displacement of the body." This is a mechanical impossibility and its existence would necessitate an anatomical anomaly.

Page 280: "Because of the elongation of the cervix, introduction of the sound is difficult." The difficulty in the introduction of the sound is due to the flexure and not to the elongation of

the cervix.

Page 281: "If the organ be pushed high in the pelvis the cervical elongation decreases and the fundus falls forward upon the bladder." Simple elevation will neither decrease the cervical elongation, if it is due, as the author states, to hypertrophy, nor will it cause the anteflexed, retroverted uterus to fall forward.

Page 281: "The posterior lip is much longer than the anterior." When the anteflexion causes a difference in the length of the lips the posterior lip is invariably the shorter.

Page 281: "Downward traction increases the backward tendency of the body." The contrary is true.

Clinical observation disproves the author's statement that the

dysmenorrhea is never due to mechanical obstruction.

Page 282: "The blood is produced in too sudden a manner at first, and is sparsely mixed with lymphoid cells, and hence coagulates instead of remaining fluid. The pain is produced because the endometrium is altered in essential particulars and because of the blood clots." If mechanical obstruction does not exist the blood will escape instead of becoming coagulated. The author also states that "the most severe dysmenorrhea" occurs "from the clotting of the blood before the endometrium has undergone the structural changes." The author contradicts himself regarding the causation of the dysmenorrhea.

To remove "every possible vestige of the endometrium" with the curette in cases of simple anteflexion would seem to be

extremely heroic treatment.

Page 284: The author is to be commended for his just criti-

cism of the stem pessary.

Page 285: The experience, "We have seen conception follow within five days after a curettage, and it is the usual result at the second or third period following the operation," is, to say the least, remarkable.

Page 285: "The two factors, . . . the amount of cervical hypertrophy, and the axis of the cervical canal to that of the vagina," are incomplete indications for operative interference

in anteflexion of the uterus.

Page 286: In anteflexion complicated by the menopause, the statement that "if surgical treatment be refused it becomes necessary to resort to opiates in some form at each recurring menstrual period"—that is, after the menopause—is paradoxical. A statement which follows, "such methods of relief as are given in the chapter on Dysmenorrhea should be tried before resorting to the use of this drug," is unworthy of comment.

Page 289: "Retroposition is the first step to prolapsus." Prolapsus must occur in order to allow retroposition to take

place.

Page 291: "This" (the menstrual flow), "however, is not painful, as a rule, owing to the fluid condition of the blood and the patency of the canal." This is not consistent with the clinical facts that the menstruation is frequently painful, that the blood is often clotted, and that the canal is obstructed in cases of marked flexure.

Page 296: In the consideration of adherent retropositions the use of the uterine elevator is thoroughly described, but it is stated that "it should be employed only in . . . cases of free retroposition."

Page 301: "This latter" (the tampon) "should be put in lengthwise, rolled hard, and turned sidewise, so that the ends

will rest in the obturator foramina in front of the cervix." This statement reflects discredit upon American gynecology.

Page 302: "Retroversion without enlargement, such as we find in the unmarried," seldom requires treatment. The author, however, states that "one of three things must be done: either fit a pessary, or perform Alexander's operation or hysterorrhaphy." Figures 223 and 224, illustrating the introduction of the pessary, are faulty. The description of the procedure is excellent. The mode of action of the pessary, its indications and contra-indications, however, receive meagre attention.

Although lacerations of the soft parts have been considered in a separate chapter, twelve pages in the section on Distortions and Malpositions are devoted to operations on the posterior and

anterior vaginal walls.

Page 319: The author states that in prolapsus the cervix is the lowest point of the tumor. This is not correct, because in complete procidentia the cervix points upward probably as often as it points downward.

Figure 252, page 336, depicts an operation purporting to be Emmet's, but which has probably never been performed or

described by Emmet.

The chapters on Malignant Diseases of the Female Genitalia, Uterine Neoplasms, Pelvic Inflammation, Ectopic Gestation, Diseases of the Ovaries and Tubes, and Diseases of the Urethra, Bladder, and Ureters, are exhaustive, contain much well-classified new matter and many beautiful illustrations. The pathology in these sections is emphatically the pathology of the present day. The authors have very properly not considered the pathology and methods of treatment which have been discarded by modern science. These sections are a valuable contribution to gynecological literature, and present "gynecological surgery and treatment as it is practised in America."

As each individual author is free from absolute responsibility for any particular statement, it naturally follows that the burden of responsibility for the entire work must rest upon the editor. With the exception of the section on Distortions and Malpositions, the "American Text Book of Gynecology," in general, fulfils the promise made in its preface, and is a good

working text book for physicians and students.

T. J. WATKINS.

Obstetrics. Part I. Labor delineated in Ninety-eight Plates of O. Schaeffer, M.D. Translated and published under the supervision of J. Clifton Edgar, M.D. New York: L. Hydel.

This volume, the first of a proposed series of Medical Pocket Atlases, is composed exclusively of illustrations with a few descriptive words, made by Dr. Schaeffer, who is an assistant at the University Frauenklinik of Munich. They show the position of the fetus in both normal and abnormal cases, and the

various stages in labor, also illustrating the methods of applying the forceps, of performing version, of expression by the Credé and Kristellar methods, of supporting the perineum, etc. The work is well done, and should the promised volumes upon other medical subjects prove as excellent as this, students who cannot afford to purchase large special atlases, and even those who can, may look forward to the possession of a helpful series of illustrative plates in convenient shape.

A. R. S.

THE AFTER-TREATMENT OF CASES OF ABDOMINAL SECTION. By CHRISTOPHER MARTIN, M.B. (Edin.), F.R.C.S. (Eng.), Surgeon to the Birmingham and Midland Hospital for Women. Svo, pp. 48. Birmingham: Cornish Brothers, New street, 1894.

THE PHYSIOLOGY OF DEATH FROM TRAUMATIC FEVER. By JOHN D. MALCOLM, M.B., C.M., Fellow of the Royal College of Surgeons of Edinburgh, Surgeon to the Samaritan Free Hospital. 8vo, pp. 128. London: J. & A. Churchill, 1893.

Both of these monographs are admirable and can be read with profit and pleasure by every abdominal surgeon. The first is entirely practical, and the second, while dealing somewhat

with theory, holds a most useful lesson.

Christopher Martin, who was for many years associated with Mr. Lawson Tait, gives us the experience gained from over a thousand abdominal sections, crystallized along the lines on which the after-treatment should be conducted. While acknowledging his indebtedness to Mr. Tait, he differs with him on important points, and notably on the value of antisepsis. His directions are clear, practical, and based on principles which we must all acknowledge, though we may differ in the execution of the details.

The "Physiology of Death from Traumatic Fever" is a study in abdominal surgery which can only be appreciated when carefully read, yet so logical is its sequence and so clear and crisp its diction that the reading becomes a pleasure. A part can but rarely show clearly the meaning of the whole, yet, as in the fragment appended, it can point the trend of the author's

idea:

"It is well known that if constipation be permitted to continue after any operation, the signs of fever are likely to become more evident, and that the febrile exacerbation may almost certainly be alleviated, temporarily at least, if not permanently, by the action of a purgative. In abdominal surgery it sometimes happens that serious general disturbance, and even death, is induced by retention of the contents of the bowel after an operation. The symptoms brought about by this complication seem to have been very generally mistaken for those of peritonitis. The diagnostic signs which distinguish inflam-

mation of the peritoneum from a simple retention of flatus due to paralysis or obstruction of the bowels after an abdominal section, do not appear to have been differentiated until" recently.

[A paralysis of the intestine giving rise to symptoms of ob-

struction is termed by the author pseudo-ileus.]

"Cases have repeatedly been observed showing every clinical evidence of paralysis of the intestine and pseudo-ileus, with signs of peritonitis and congestion of the peritoneum found after death, but in which there was no evidence whatever of congestion or of any structural change in the wall of the gut when the abdomen was reopened during life. The peritoneum appeared perfectly healthy, although, at the time of reopening, the symptoms of pseudo-ileus were so well marked that it was for the discovery and, if possible, the relief of obstruction that the second operation was undertaken. In some cases of this kind an obstruction has been found. In others nothing has been discovered which could be described as an obstruction. either at the second operation or at the post-mortem examination. In these cases the symptoms of pseudo-ileus were well established before there was any sign of mischief in the peritoneum. Hence neither peritonitis, nor hyperemia, nor extravasation into the peritoneum could have been the cause of the unfavorable symptoms first produced. In similar cases where no second operation has been performed, signs of peritoritis are almost invariably found after death. But in some cases which clinically were not to be distinguished from those just mentioned, no evidence of peritonitis or of extravasations into the wall of the gut has been discovered post mortem. There has either been a simple obstruction, or nothing abnormal was observed except the distention of the bowels. Again, the symptoms of an intestinal obstruction may be well marked and advancing, when suddenly, without apparent cause, or after a purgative enema has been administered, or as the result of a dose of laxative medicine, flatus begins to pass from the anus, perhaps an evacuation of feces occurs, and all adverse symptoms at once disappear." . . . "Whatever be the cause of the retention of the contents of the bowel, there can be no doubt that when this becomes absolute during the first few days after an abdominal section, the condition of the patient is a most dangerous one. Under such circumstances death from pseudoileus or from obstruction will certainly result unless relief be obtained spontaneously or by treatment. In fatal cases death is preceded by very definite clinical signs; and the state of the pulse, vessels, and heart in such cases is of great interest in connection with their condition in inflammation and in shock." . . . "When the intestine begins to expand, the vessels in its walls must be lengthened, narrowed, and subjected to pressure. Consequently there is an increase of resistance to the

blood flow in the vessels of the part first affected. If the contents of the bowel do not pass down, the distention of the gut and the increase of resistance to the blood flow in its vessels become greater and spread to other parts, until a large portion of the intestine may be tensely expanded. Later, when the abdominal walls are also stretched, pressure is made on the vessels of the parietal peritoneum, and also on the aorta and inferior vena cava. This condition does not, as might at first sight be suggested, drive the blood into other vascular areas." "Constriction of the mesenteric vessels from intestinal distention raises the blood pressure generally. This is brought about not only by the reduction in the capacity of a large vascular area, but also by the reflex mechanism which, as already pointed out, causes a contraction of the arteries in other parts as a consequence of a local opposition to the blood flow. general contraction of the vessels is necessary to equalize the pressure and prevent the circulation through the intestinal walls from being stopped altogether. Hence, if abdominal distention should occur when the blood pressure from any cause is already high, it is obvious that the effect on the pulse must be very great. Thus there is a physiological explanation of the small pulse in cases of abdominal distention during a tranmatic fever. It may be remarked, by the way, that this interpretation of the conditions found in a case of pseudo-ileus fully accounts for the 'thready' pulse of peritonitis, in which disease inflammation and tympanites are usually combined. That the small pulse in cases of pseudo-ilens following an abdominal section is not necessarily due to cardiac debility is shown by a comparison of the pulse with the condition of the heart and large vessels. On examination it will be found that exactly the same relationship obtains between the force of the pulse and the force of the heart beats as occurs in cases of traumatic fever and in shock, although, as in these diseases, this is not clinically obvious in every instance. It seems, therefore, that in all these conditions, in advancing inflammation, in shock, and in abdominal distention following a laparatomy, contraction of the arteries is brought about by a reflex physiological mechanism; that this contraction of the arteries, while raising the blood pressure in the large vessels, accounts also for the feebleness and smallness of the pulse in such vessels as the radial; and, consequently, that this condition of pulse is due, not to cardiac weakness, but to the relation which the cardiac strength bears to the obstruction produced by the contraction of the medium-sized and small arteries."

The author then discusses the probable causes of death from the condition, including sepsis from absorption from the intestinal contents, and, finding the evidence of the existence of any form of poisoning in these cases defective, the question arises whether there is any other possible explanation. He then goes

on to say: "We have seen that with the increase of the abdominal distention there is a progressive narrowing of the peripheral arteries; that this contraction may spread to and beyond vessels of the size of the radial; and that the effect of it is to raise the blood pressure in the larger arteries, but to diminish pressure in the small arteries, through which the blood may even cease to flow.

"Whether the contraction of the peripheral arteries be at first general or be confined to certain areas, if it becomes sufficiently intense either the affected areas must be deprived altogether of blood, or the regulating power of the vaso-motor system must come into play and contract the arteries of every other part of the body, or, it may be, first of one area and then of another, until all are involved. Evidence can be adduced that this contraction of the vessels has a marked effect both on the tissues of

the body and on the blood itself.

"First, as regards the tissues: In the cases under consideration the urine invariably diminishes in quantity and becomes of lower specific gravity as the symptoms of obstruction progress. These changes may be observed twenty-four hours before death, and gradually become more and more obvious, until urine ceases to enter the bladder, often for many hours. Complete suppression of urine has been observed for ten hours before death from pseudo-ileus, but in no case of this kind has the writer detected albuminuria. If the obstruction of the bowels be relieved sufficiently soon the secretion of urine returns, and the kidneys do not show any further sign of want of power." . . . "Diminution of the urine and lowering of its specific gravity do not occur in these cases until there is a marked smallness of the radial pulse. It seems, therefore, that the failure of renal action must be due to a diminished pressure in the renal vessels from a too great contraction taking place in them.

"About the time that the urine begins to diminish, or soon after this occurs, there is another obvious sign of increasing contraction of the arteries. The extremities gradually assume a death-like coldness, which extends, but less markedly, to the surface generally. This occurs even though the rectal temperature may be rapidly rising, perhaps to a very great height. The coldness may be observed five or six hours, and sometimes much longer, before death, and it is always accompanied by a small pulse. The suppression of all manifestations of mental activity is the next evident change. The patient is usually quite sensible, cheerful, and hopeful until half an hour before death. About this time the condition passes into one of coma—a few rambling remarks, a complaint of feeling giddy, or a slight restlessness being the only indications that such a change is taking place. The exclusion of blood from the organs of thought and from the motor areas is a sufficient explanation of this comatose condition; and, as we have seen that the circula-

tion is gradually being shut off from the tissues and organs by the progressive contraction of the blood vessels, it is rational to assume that the unconsciousness is due to this action affecting the vessels of those parts in which the intellectual processes are carried on. When such large and important areas have their blood supply arrested, it is probable that the abnormal reflex stimulus to contraction of other vessels must greatly increase. The vital centres in the medulla which regulate the action of the lungs and heart are at length affected; and when the exercise of the function of these centres ceases, life itself is at an end. Death is due to an excessive contraction of the arteries, brought about through a reflex physiological mechanism, by the want of fresh blood in the inflamed area, and by the opposition to the flow of blood through the vessels of the distended intestine. Evidence of the continuance of some, at least, of the functions of the medulla till the very last moments of life is found in the fact that failure of the respiration only takes place a few minutes before death. The breathing, which has been slow and stertorous, then becomes irregular, and finally there is but a spasmodic inspiratory effort, recurring at intervals, which gradually lengthen until the last inspiratory gasp occurs, often after the patient is supposed to have completely expired.

"During this final period, when the patient is virtually but not actually dead, if the heart be listened to, doubt must, in many cases, at once arise as to the correctness of any explanation of the conditions observed which assumes that cardiac failure is an important element in their causation. At this time, although the pulse may be absolutely imperceptible at the wrist, the heart beat may be heard, in some cases at least, clear and distinct and with little or no irregularity, although the breathing is a mere involuntary spasmodic contraction of the diaphragm, occurring three or four times in the minute. Evidently a flow of blood through the heart goes on even then. There must, therefore, be certain vascular areas which are not, up to the very last, so contracted as to stop the circulation. This goes on until, and apparently even after, the vital centres in the medulla cease to act. Probably some blood passes from the arterial to the venous system through the more central and warmer parts of the body, and so gets back to the heart. Hence there is often congestion of the internal viscera found after death, as in some fatal cases

of shock.

"The signs and symptoms which have been described point to the conclusion that the condition of the vascular system in the cases under consideration is one of increasing arterial contraction, which, if its cause be sufficiently continuous and powerful, arrests the supply of blood to the various tissues, one vascular area after another being affected, until the medulla oblongata itself is deprived of nourishment and the patient dies. Death is in these cases wholly dependent on the persistence of the cause—

namely, the increasing abdominal distention—and is scarcely, if at all, influenced by the power of the heart." . . . "In the cases of abdominal section in which the writer has ascribed the deaths to paralysis or obstruction of the bowels, it has been shown that there is a time, after the symptoms of obstruction are well developed, when no sign of peritonitis is found on reopening the abdomen. We have seen also that, as death approaches, there is reason to believe that the circulation goes on longer in the inner and warmer parts of the body, which are apt to show marked congestion after death. Thus, although the peritoneum may show its usual smooth, glistening surface, a deep blue-black color of that membrane is often observed, showing clearly that a local dilatation of its vessels takes place and that only a feeble blood current passes through them. When such conditions exist it is not to be wondered at that an asthenic inflammation, in a wound which implicates the peritoneum, is apt to spread and to induce diffuse peritonitis. The writer has repeatedly seen the signs of peritonitis well marked in the neighborhood of the abdominal incision, but shading off, so that the peritoneum and upper parts of the abdominal cavity were quite healthy in appearance. In two such cases there was a complete obstruction of the bowels, without any sign of inflammation of the peritoneum on the gut or adjacent to the gut at the point of obstruction. He has also noted that when death occurs very quickly after the rise of temperature commences, signs of peritonitis are frequently absent or slightly marked. On the other hand, the longer the patient lives after the secondary rise of temperature begins, the more distinct are the evidences of spreading peritonitis which are found post mortem. It is to be observed that the patient is really dying when the secondary inflammation in the wound comes on. This inflammation, and the peritonitis which usually spreads from it, are not the causes but the consequences of the tympanites. Inflammation of the peritoneum is, in these cases, only an incident in the mode of death; and therefore, although it is almost invariably present, it cannot properly be called the cause of death. It cannot even be accurately described as the immediate cause of death, for some cases die without any sign of peritonitis being discoverable afterwards." . . . "In the contraction of the arteries there is also a rational explanation of those cases in which death occurs from twelve to sixty or more hours after an operation, apparently from the severity of the procedure. Such cases are variously attributed to 'shock' and 'exhaustion.' Neither of these terms, however, carries with it an altogether satisfactory explanation. The patients certainly rally to some extent, so that the term 'shock' is not quite appropriate. On the other hand, the term 'exhaustion' should be reserved for cases of death from a much more prolonged illness. In the cases under consideration the contraction of the vessels due to the shock

does not relax before that due to the inflammatory changes comes on with great severity. The urinary secretion is never free; it may be completely suppressed from the first. The patient may not become properly warmed. Full mental activity is not restored. After a variable time death takes place with all the evidences of intense contraction of the vessels. The fatal result depends on an excessive degree of injury as compared with the vital power of the patient and with the regulating force of the vaso-motor and thermal systems. Perhaps in these cases more than in any other the fatality may be attributed to uncomplicated traumatic fever. Such deaths only occur in very feeble individuals, or after the most severe operations. They must be carefully separated from those due to acute septicemia, which they may closely resemble, but which may occur in the most healthy and after any operation, however slight."

B. H. W.

ABSTRACTS.

1. Doctor: A Case of Conservative Cesarean Section (Centralblatt für Gynäkologie, 1893, No. 27).—Patient is a primipara, æt. 32, with a contracted pelvis. Spinæ ilii, 26.5 centimetres; cristæ ilii, 27.5 centimetres; conjugata externa, 17.75 centimetres; tuber ischii at ontlet, 4 centimetres. Promontory cannot be reached. Two fingers can scarcely pass the pelvic outlet. The patient is of small stature, has deformed limbs and lumbo-sacral kyphosis. Child in transverse position.

The operation was performed by Kézmározky at the onset of labor. No compression was used; the cervix was simply held by an assistant. Abdominal and uterine incision as usual. Child asphyxiated. Moderate bleeding. Deep and superficial silk sutures were used for the uterus, silkworm gut for the abdominal wound. A sponge being left in the abdomen, it became necessary to reopen the abdomen. Prior to the operation ergotin was administered, but no active contractions were observed. The patient's convalescence was uninterrupted; she was able to get up on the eighteenth day.

J. R.

2. Seeligmann: Porro's Operation for Osteomalacia, with a new After-treatment (Centralblatt für Gynükologie, 1893, No. 28).—A case of severe osteomalacia, with pregnancy advanced to the thirty-fourth week, presented itself to Dr. Seeligmann. He performed Porro's operation with good results to mother and child.

The history of the case is in brief the following: Mrs. B., aged 37, married fifteen years. Father alive and healthy; mother died of phthisis. Patient's previous history negative.

Location healthy. Has been pregnant twelve times, seven children at term and five abortions. Present trouble began after the eighth pregnancy, seven years ago. Pains started in the bones of the pelvis and extended to the upper and lower extremities. These were so severe that the patient became bedridden. During these seven years conception took place four times, two living children and two abortions being the outcome. The children were nursed each one and a half to two years, and she always conceived before she ceased nursing. Three years ago the last child was delivered by version and extraction; it survived the operation only a few hours. The patient continued to get worse and almost helpless. While walking on crutches she fell and fractured the right femur.

Status, October, 1892: Very emaciated body. Kyphoscoliosis dextra and lordosis. There is an overriding of the lower fragment of the right femur, shortening the limb five centimetres. The pelvis shows typical changes of osteomalacia, with some elasticity of the bones. Measurements: Spinæ ilii, 24.5 centimetres; cristæ ilii, 31 centimetres; trochanters, 32 centimetres; conjugata externa, 19 centimetres. Internal examination reveals the fact that delivery per vias naturales is impossible. Transverse presentation, head to the right. Pregnancy advanced to the thirty-fourth week. Porro's operation was decided upon, on account of the favorable influence the removal of the pelvic organs exerts upon the osteomalacia. The stump was treated extraperitoneally. The reconvalescence was without accident.

The author decided to employ extension while the bones were still soft. This proved successful. Traction was begun six days after the operation and continued for eight weeks. The patient was placed upon a water bed and counter-traction applied above. The weights were gradually increased until ten pounds were used. The following effects were produced: The pains soon disappeared. The body is eighteen centimetres longer. The right extremity is almost as long as the left. Standing is now possible. The configuration of the pelvis is favorably affected; the inlet and outlet are larger. The kyphoscoliosis and lordosis have nearly disappeared. After seven years of bedridden life, with the most severe pains and deformities, the patient has regained the power of walking and is steadily improving. She is now capable of performing her household duties.

3. Staude: Three Cases of Cesarean Section (Centralblatt für Gynäkologie, 1893, No. 34).—Case I.—A woman was brought to the hospital who was suffering from epileptic attacks. The urine was free from albumin. A correct history was not obtainable, the patient being an imbecile. The woman was nearly at full term. Pelvis normal. A digital examination

revealed a total occlusion of the upper third of the vagina. The finger came in contact with a septum about one centimetre in thickness; above this there seemed to be a hollow space in which the cervix could be felt projecting. The cause of this occlusion could not be ascertained. The question arose whether it would be advisable to divide this septum and deliver per vaginam, or if the Cesarean section would be preferable. The experience of the author, sustained by Löhlein and Fritsch, led him to select the sectio Cesarea.

Labor pains began September 9th. The child was in L. O. A. position. Through the septum the os could be felt dilated to the size of a silver dollar. The Cesarean operation was performed in the usual way. The uterus was opened after being lifted out of the abdominal cavity. A living child was extracted. The cervix permitted the passing of two fingers; they then entered a hollow space, about the size of half alemon, which was separated by the aforementioned septum from the lower two-thirds of the vagina. To provide for drainage the septum was perforated with a large trocar, and a drainage tube passed from the uterus into the vagina. The uterus was closed with silk and supraperitoneal catgut sutures.

The patient made a good recovery. The drainage tube had

to be several times renewed.

Two months post partum tupelo tents were inserted into the opened septum, followed by Bozeman's vaginal dilators, and on December 13th the woman was discharged with a perfectly

normal vagina.

CASE II. Porro Operation.—Woman had been delivered three times of dead children. Craniotomy and premature labor had to be employed in every case. The pelvis was uniformly contracted: spinæ ilii, 20.5 centimetres; cristæ ilii, 23 centimetres; trochanters, 28 centimetres; conjugata externa, 17 centimetres; conjugata diagonalis, 9 centimetres.

Besides the contracted pelvis there existed a number of exostoses upon the pubes, tuber ischii, sacrum, and coceyx, which

encroached considerably upon the pelvic diameters.

The patient being anxious to have a living child, she was asked to come to the hospital at the end of a new pregnancy, for the purpose of having a Cesarean section performed. She was also told that in case a living child was born a Porro operation would be performed to prevent further conception. The woman entered the hospital November 27th. She was in labor; os the size of a silver dollar; child in vertex presentation; labor pains good. Sectio Cesarea was immediately performed. The knife cut through the placenta, which was in the anterior uterine wall. The head was firmly fixed in the pelvis, and the extraction proved difficult. The child was living, and the Porro operation was therefore performed. The elastic ligature was tightened around the cervix, a broad needle pushed through the

cervix, above which another elastic ligature was placed. The uterus was then amputated, the stump covered with peritoneum and treated extraperitoneally. Excellent recovery. After four weeks the wound had nearly closed.

Case III.—This was a case of repeated Cesarean section. The first case was published in the *Deutsche med. Wochenschrift*, 1891, No. 41. The woman became pregnant in October, 1892. Labor pains commenced July 2d. The sectio Cesarea was performed after the membranes had ruptured and the os was dilated to the size of a silver dollar. Incision in the median line. Omentum adherent to the abdominal parietes. Uterus free, except that a long, stretched adhesion connected it to the right side of the abdomen. The cicatrix of the first operation presented a smooth, narrow line. The silk sutures which had been used could not be found. Incision of the uterus through the old scar. Placenta anterior. A living child was extracted. The uterus was again closed by twenty-eight deep and eight superficial silk sutures; above these was placed a continuous row of superficial catgut sutures. Good recovery.

J. R.

4. Courant: Porro's Operation in Cicatricial Stenosis OF THE VAGINA AND VESICAL FISTULÆ (Centralblatt für Gynäkologie, 1893, No. 43).—Courant reports the following case, observed in the Breslau Frauenklinik: Patient, æt. 37, aborted in the fourth month; convalescence normal. In her second pregnancy she was in labor five days. The first physician summoned abstained from doing anything. A second one used the forceps. This was followed immediately by a flow of urine from the vagina. The forceps delivery being unsuccessful, perforation was performed and extraction trials made for several hours; then this physician also left the patient. Twentyfour hours later occurred the spontaneous expulsion of the fetus. A long, febrile puerperium followed, with a constant leakage of urine from the vagina and the passage of a urinary calculus. Sixteen weeks post partum the patient presented herself at the clinic. An operation for vesico-vaginal fistula was performed, which was difficult on account of the contracted vagina. Leakage persisting, another operation became necessary, which successfully closed the fistula.

April 5th, 1892, the patient again entered the clinic. She had last menstruated in November, 1891. In the latter part of January urine had begun to flow from the vagina. She had also chills, headache, fainting spells, and pain in the bladder. Status presens: Medium-sized woman; chest organs normal; mammæ contain colostrum. Pelvic measurements: Iliac spines, 23 centimetres; iliac crests, 24.5 centimetres; external conjugate, 16 centimetres; right oblique, 19.5 centimetres; left oblique, 22 centimetres. The diagonal conjugate could not be

ascertained owing to the atresia of the vagina.

Incontinence of urine and local eczema. The vagina is contracted and funnel-shaped, with two deep depressions at the bottom. Uterus anteflexed, softened, and symmetrically enlarged. With the aid of the speculum two small openings can be perceived. A sound enters these, but it does not touch a catheter introduced per urethram. Blood and foul-smelling urine come from these fistulæ. Temperature 101.4°F., pulse 116. To recapitulate: Unsuccessful attempts at delivery caused a severe injury to the uterus, bladder, and vagina. The healing of these produced bad strictures of the vagina and cervix and vesico-vaginal and uterine fistulæ. The first operation only closed the vesico-vaginal fistula; the vesico-cervical fistula was closed through the second operation. A vesico-uterine fistula must have continued to exist, which was probably closed by a valve-like arrangement, and as the uterus grew this became patent again. The latent existence of vesico-uterine fistulæ is reported by several authors.

The attempt to dilate the vagina by incisions and tampons proved unsuccessful. The Porro operation was therefore de-

cided upon for the following reasons:

1. The contracted vagina does not admit sufficient drainage in case of conservative Cesarean section.

2. The endometrium is probably infected.

3. It is desirable to make the woman sterile, as she cannot

carry to term.

Operation April 7th, 1892. Incision in the median line. Broad ligaments clamped and partly ligated. Uterus dissected from the bladder and removed. Cervical mucous membranes cauterized by Paquelin cautery. Closure of the stump by deep sutures and covered with peritoneum. The cervical stump is brought up into the abdominal wound and sutured to it. Closure of the abdominal wound. The uterus contained a macerated fetus twenty-two centimetres long. Convalescence favorable; highest temperature 101.3° F., on the fifth day. Six weeks after operation the remaining fistula was closed and the patient dismissed cured.

5. Von Woerz, Hans: Obstruction of Labor through a Lymphangioma subaxillare (Centralblatt für Gynäkologie, 1894, No. 5).—A Hpara, æt. 28, entered the Vienna University Hospital in the service of Prof. Schauta. Her first labor was terminated by the forceps, the woman being delivered of a very large living child. Pelvis normal. Fetus in second transverse position. Os nearly fully dilated. Membranes not ruptured; through the membranes a prolapsed hand and a coil of strongly pulsating cord could be felt.

The woman was chloroformed and the left foot brought down without any difficulty. The hand and cord receded into the uterus. The fetal heart sounds being good, the expulsion of

the child was left to Nature. About two hours later the heart sounds became irregular, and as labor did not advance, in spite of strong labor pains, it was decided to extract the child. The delivery of the fetus to the umbilicus required considerable force, and only after much traction was it possible to bring down the right shoulder and extract the right arm. The left half of the thorax remained above the symphysis. It was very difficult to turn the left shoulder posteriorly and to deliver the left arm. An examination with the full hand now revealed the fact that the whole pelvis was filled with a soft, elastic tumor attached to the left side of the fetus, while the movable head was displaced toward the right side. Making strong traction upon the tumor and pressing down from above, it finally entered the pelvis and was delivered. The after-coming head was easily born. The child weighed seven pounds and was dead. Duration of operation, ten minutes. Upon inspection it was found that upon the left side of the thorax there was a tumor about the size of a fetal head. It was soft, fluctuating, and covered with a thin but normal cutis. The tumor extended under and had displaced the scapula and clavicle. A communication with the pleural cavity was not found, but the ribs and clavicle were distorted through pressure. In the centre of the growth there was clear serum containing a cyst about the size of a fist, surrounded by numerous small cysts.

These cases are exceedingly rare. The author was able to find only one other case, reported by McLean in The American Journal of Obstetrics, 1888, No. 4.

6. Büttner: Myoma of the Female Urethra (Zeitschrift für Geburtshülfe und Gynükologie, Bd. xxviii., Heft 1).-This condition was observed in a woman aged 40 years, married nine years, and sterile. For about one year she had been subject to a feeling of weight in the region of the meatus urinarius, from which a swelling protruded for over a month. This swelling had grown rapidly, and caused incontinence of urine and much suffering. Büttner detected a tumor as large as a hen's egg protruding from the vulva. Its pedicle was attached to the anterior wall of the urethra at the meatus, and that orifice was in consequence greatly distorted, forming a semilunar slit nearly two inches wide, with the concavity formed by the back of the tumor directed forward. The tumor was tough, like an ordinary fibroid, and beginning to ulcerate. The operation was performed by Ahlfeld. His aim was to avoid cutting away any of the musculature of the urethra. The tumor was pulled forward with forceps: then a circular incision was made through the fibrous capsule around the pedicle, or rather base, of the tunior. Enucleation of the myoma proved easy; hardly a drop of blood was lost. The meatus at once contracted, a small depression in its anterior border representing the site of enucleation.

tumor proved to be a true myoma. She was able to hold her urine one day after the operation. A month later she reported herself as perfectly free from any discomfort.

J. R.

- 7. Goldscheider, A.: Sepsis puerperalis: a Clinical and Bacteriological Contribution (*Charité Annalen*, Band xviii.).

 —The basis of this essay are sixty-eight cases of puerperal fever observed during the last three years. The cases are divided into the following classes, according to the classification of Kehrer:
 - I. Sapremia (resorptive fever)—sixteen cases.

II. Peritonitis—twenty-one cases.

III. Pyemia, thrombo-phlebitis, and mixed forms—twenty-four cases.

IV. Septicemia—three cases.

I. Supremia.—Under sapremia is understood a febrile condition caused by the resorption of putrid masses from the cavum uteri. This fever subsides after thorough local antiseptic treatment. The author reports twelve cases (five confinements at term and seven abortions) without a death, and concludes that the prognosis of sapremia is favorable, especially if a timely and energetic local therapy is carried out.

The fever shows peculiar characteristics. It is intermittent or markedly remittent; initial chills are the rule. The pulse is full and of moderate tension, in contrast to the small, rapid pulse of the septic forms of puerperal fever. Respiration is rapid—about 60 per minute. Herpes labialis is sometimes observed. Stinking lochia are the rule. Local symptoms are

generally absent.

In the beginning sapremia may resemble the gravest forms of puerperal fever. The results of the local treatment aid in making the differential diagnosis and enable us to give a favorable prognosis.

Under the same heading he also reports four cases of temperature rise due to infected lacerations of the perineum. These

did well under appropriate local treatment.

II. Peritonitis puerperalis (eight abortions, twelve deliveries at term, all terminating fatally).—When these patients first came under observation the tympanites was moderate; it increased with approaching death. Exudations could only be demonstrated in four cases. Abdominal tenderness is characteristic of peritonitis; it may be absent if the sensorium is not free. Although vomiting is generally thought to be a constant symptom of peritonitis, it was not present in four cases. The pulse is small and frequent. The character of the fever is variable. The temperature ranged from 38.5° to 42° Celsius. In three cases the temperature was subfebrile; in these cases there was collapse.

The lochia were stinking in five cases. The fully described cases and accompanying post-mortem reports give no uniform

picture.

III. Puerperal Pyemia, Thrombo-phlebitis, Septico-pyemia.—The author groups these cases into nine subdivisions. In some cases there was thrombo-phlebitis and embolism; in others pus or pyogenic products were circulating in the blood. He also describes cases in which, besides the pyemia, there existed a diphtheritic endometritis and diphtheritic puerperal abscesses.

The prognosis in these cases is undoubtedly better than in the septic form; out of twenty four cases nine recoveries are noted. The differential diagnosis between pyemia and septic peritonitis is only possible after prolonged observation. Repeated chills are characteristic of pyemia. In septic peritonitis we have chills in the beginning of the disease. The character of the pulse is of great importance in the diagnosis and prognosis. In cases of pure pyemia we find a fever pulse, full and bounding. Stinking lochia are less frequent in pyemia than in septicemia. Swelling of the spleen could not be demonstrated intra vitam. A purulent peritonitis is not of a pyemic nature.

IV. Septicemia (three cases—one abortion, death after four days; two deliveries at term, fatal after nine and seventeen days respectively).—The varying picture of the disease is probably due to differing biological conditions and the malignancy and number of the invading streptococci. The malignancy of the streptococci is apparently not caused by any special virulence of the secreted poisonous substances, but is due to an enormous power of propagation. It is doubtful whether the streptococci acquire the malignant character only after they have invaded the system. More probably their greater development is aided by the presence of bacteria of putrefaction in the cavum nteri.

The therapeutic rules laid down are in brief the following:

Local therapy in sapremia.

Avoidance of all and every local treatment in the peritoneal forms of puerperal fever, also in thrombo-phlebitis and pyemia.

Intra-uterine irrigation in endometritis purulenta, without dis-

turbing the patient much.

Abundant nourishment. The author has used the stomach tube with much success in the feeding of the patients. Alcohol. Absolute rest and sleep. Active stimulation. Tincture strophanthus in cardiac weakness.

J. R.

S. Kayser, F.: Two Cases of Cesarean Section on account of Marked Stenosis of the Soft Parts (Zeitschrift für Geburtshülfe und Gynükologie, Band xxvii., Heft 2).—These two cases are reported from the University Hospital in Giessen and were operated on by Prof. Löhlein. The indications in both cases were marked stenosis of the vagina and atresia of the os, due to injuries from previous confinements, and extensive bands of scar tissue from operations for the cure of vesico-vaginal fistulæ.

Case I.—Mrs. H., æt. 29. In 1889 passed through a difficult confinement. After various attempts to deliver with the forceps, perforation and cephalotripsy of a very large child. Development of a vesico vaginal fistula. Six weeks later successful closure of the fistula. In February, 1891, the woman presented herself in the clinic in the seventh lunar month of pregnancy. Gestation had progressed without any untoward symptoms. Taking into consideration the but lately united fistula and the probability of a large child, the woman was advised to return by the middle of March for the purpose of having premature labor induced.

She was admitted March 12th and the following condition

was noted:

Pendulous belly. Child in L. O. A. position. Head movable above the brim. External pelvic measurements normal. Stenosis of the vagina through extensive bands of scar tissue. The promontory and the linea innominata can easily be reached. The promontory is double, and the conjugata vera is

shortened to about 9.5 centimetres.

All attempts to arouse labor pains were unsuccessful. Hot and cold douches, introduction of bougies, tamponade of the vagina, and mechanical dilatation of the os were tried in vain for three days. Although slight labor pains appeared off and on, the case made no progress and the os remained undilatable. As the mother's pulse and temperature had risen and membranes were ruptured, it was concluded not to wait any longer and to perform the sectio Cesarea. The dilatation of the os by deep incisions had been under discussion, but in consideration of the only lately healed fistula, and the improbability of securing a living child (which the mother desired) because of the existing pelvic contraction, Cesarean section was certainly the best operation.

The technique of the operation was the usual one. The abdominal incision extended from the symphysis to about two inches above the umbilicus. The uterus was removed from the abdominal cavity before being opened. The uterine wound was closed by three layers of sublimated catgut sutures. The puerperium passed without any untoward complications, except that the pulse was rapid for the first two weeks. The child

was nursed by the mother.

The history of the second case is a similar one. The woman developed a large vesico-vaginal fistula after a serious forceps delivery. This fistula was successfully closed. After this the woman aborted in the third month, and in the year following passed through a premature labor (six months). The stenosis of the vagina was so extreme that the small fetus could only be delivered after diminishing the size of the head. The woman at that time was informed of the impossibility of delivering a viable child per vias naturales. On the 19th of May, 1892,

she presented herself in the seventh month of pregnancy. The membranes had ruptured spontaneously. Labor pains appeared a few hours later. Child living, pelvis moderately contracted. Internal examination demonstrated an extremely contracted vagina. The child being premature, it was not expected that even through the sectio Cesarea a living child could be obtained; the attempt was therefore made to dilate the vagina by iodoform tampons. This proved not successful. Deep incisions were considered inadvisable on account of the probability of again opening the vesical fistula. The sectio Cesarea was now performed, and a living child (1,850 grammes) was delivered.

The first three days of the puerperium were normal, but the patient was somewhat restless and the lochia had a foul odor. On the fourth day it became necessary to remove the patient into another wing of the hospital. Although this was done with the greatest care, the condition of the patient changed immediately for the worse. Both pulse and temperature rose (132, 101.4° F.), and the woman vomited repeatedly. A careful irrigation did not check the progress of the sepsis, and the woman expired on the seventh day. The post-mortem demonstrated the absence of general peritonitis. Coils of small intestines were adherent to the uterine wound, and uterine sutures were surrounded by small abscesses.

- 9. Pregnancy in a Uterine Cornu (Centralblatt für Gynäkologie, 1894, No. 4).—Wehle demonstrated before the Dresden Gynecological Society a specimen of pregnancy, advanced to the fifth month, in a rudimentary left cornu. The patient was 35 years old and had passed through four normal pregnancies. Last menstruation March, 1893. On August 28th, after a fall, bleeding commenced, which lasted until the operation nine days later. First she passed some blood clots, later the discharge became ill-smelling. Patient complained of severe backache; the abdomen was tender; general condition poor. When the abdomen was opened the right side of the uterus was found enlarged and pushed to the right; the right appendages were normal. At the level of the internal os was a pedicle about two inches thick, to which the left cornu was attached. The left appendages were also normal, and the left ovary contained a corpus luteum. An elastic ligature was placed around the cornu, the pedicle divided, and the remaining stump treated after Leopold's method of abdominal myomotomy. The cornu measured twenty centimetres. The opened sac exposed the amnion, through which a foot could be seen. The patient made a good recovery.
- 10. Freund: A New Operation for Prolapsus Uteri (Centralblatt für Gynäkologie, 1893, No. 47).—The author publishes a new operation for prolapsus uteri which is simple,

bloodless, and may be performed in a few minutes without anesthesia. The operation consists in the introduction of three or more purse-string sutures of strong silver wire, which encircle the vagina, being quilted in at equal distances, beginning near the cervix, so that the uterus is supported in much the same way as after Le Fort's operation. A curved needle enters the vaginal mucous membrane near the cervix, and travels under the vaginal mucosa. The needle runs in and out, emerging at the point of entrance. The cervix is then pushed up, the suture tightened, the wire twisted and cut short. At a distance of from two to three centimetres a second circular suture is introduced, tightened, and twisted off like the preceding one; this is repeated until the calibre of the vagina is so much narrowed that only one finger is admitted. The last suture is placed at the introitus vaginæ. The sutures are not removed. It is important that the sutures be placed entirely beneath the vaginal mucous membrane, otherwise they cannot be properly tightened; to accomplish this the needle must enter exactly the last point of exit. The number of sutures required are dependent upon the size of the vagina: in some three suffice; in others four and more are necessary.

This operation has the advantage that it may be performed in old and feeble patients; they need not be kept in bed more than one day. It causes but little pain, and can be done in cases in which, for one reason or the other, anesthesia is contra-indicated. Freund reports two cases in which excellent results were obtained. The first was an old lady, æt. 69, who had complete prolapsus uteri et vaginæ for nineteen years. She was able to leave the bed on the day following the operation, could walk without any discomfort, and no amount of pressing could cause the nterus to descend. The second case was a woman, 57 years old, who had a large cystocele and rectocele; uterus atrophic, but otherwise normal. Four purse-string sutures effected a complete cure. The patient walked about a few hours after the operation. Freund also operated upon three dispensary patients, who

were able to walk home.

(If the silver sutures must always remain in situ, the operation will not be practicable for women who are in the child-bearing period. It is possible that irritation and proliferation of new fibrous tissue may follow, so that after a time the sutures may be removed. Edebohls, of New York, has performed the operation several times. He prefers to administer an anesthetic and uses silkworm gut rather than silver.)

11. Krohl: Clinical Observations and Experiments with Various Preparations of Ergot and their Influence upon the Puerperium (Archiv für Gynäkologie, Bd. lxv., Heft 1.)—Ergot in substance varies in strength and effect, and is, therefore, best avoided. The most important active principles of the

drug are ergotin and cornutin; these should be employed whenever the administration of ergot is indicated. Krohl investigated the influence and effect of these two preparations upon the puerperium and uterine involution. To have as uniform a material as possible, he selected one hundred and twenty primi-

paræ, who were divided into three groups.

The first group received cornutin 0.024 pro die, divided into three doses in pills; the second ergotin, 3.0 pro die in solution; and the other forty cases remained without medication. Ergotin and cornutin intensified after-pains and caused a more rapid involution of the uterus. In cases in which ergotin was given, the uterus occupied on the third day the height corresponding to the fifth day of the third group. The action of cornutin was even more potent; in cases who had received this drug (very expensive), the uterus on the second day was not larger in size than in cases without ergot on the fourth day.

On the tenth day the os internum was found closed in seventy-eight per cent of group 1, in sixty-five per cent of group 2,

in fifty-two per cent of group 3.

Both ergotin and cornutin diminish the pulse rate. Upon the temperature no influence was noted. The well-being of mother

and child remained unchanged.

These results lead Krohl to advocate the routine administration of ergotin or cornutin in all cases, even in those in which the lying in period proceeds perfectly normally. Before the termination of labor, these drugs should be given prophylactically in Cesarean section, twin labor, and hydramnion, after labor in postpartum hemorrhage, uterine subinvolution, and endometritis purperalis. Ergot is contra-indicated in hemorrhage during gestation and to intensify inefficient labor pains.

J. R.

12. Condamin and Repelin: The Use of Pencils of Chloride of Zinc in the Treatment of Uterine Fibroids (Arch. de Toc. et de Gyn., October, 1893).—The authors begin by stating that they do not indorse Gusserow's axiom that extirpation is the first therapeutic indication in regard to a fibroid tumor. Certain symptoms of such a tumor necessitate palliative measures only, while waiting for the influence of the menopause upon the growth. Chloride of zinc may under these conditions be given a trial; its effect is marked upon hemorrhage and hydrorrhea.

The age of the patient then constitutes the first indication for this method of treatment. A second important consideration is her general physical condition; the cachectic state induced by frequent and abundant hemorrhages renders the prognosis of surgical intervention very doubtful, while so simple a procedure as the treatment to be described is certainly harmless and may be useful. A third essential to the obtaining of the best results is that the cervix be dilated and that the uterine cavity be not

too large. The technique of the operation is to be carefully followed to the minutest detail, as the slightest carelessness may cause failure or some complication. The pencils of chloride of zinc vary in size according to the necessities of the case, and are somewhat flexible. There are three steps to the operation:

1. The patient is placed in the obstetrical position, and, as a rule, is not anesthetized, the process being practically painless. The external genitals and vagina are next cleansed, and the cervix dilated by means of Hegar's bougies, slowly enough to avoid hemorrhage. When the diameter of the cervix is about

two-fifths of an inch the uterus is washed out.

2. After drying the uterine cavity with absorbent cotton carried in on a holder, the pencil is to be inserted. This is sometimes difficult, for the pencil must be placed above the os internum, and not in the cervix, for a reason to be stated later. When withdrawing the forceps which was used to carry in the pencil every precaution should be taken to prevent the latter

from slipping down.

3. By means of a strip of iodoform gauze in the cervix the zinc pencil is kept in place. Finally a tampon of cotton soaked in glycerin and iodoform is introduced into the vagina. The patient is kept in bed from seven to ten days, but the tampon, of course, is to be removed before that time and vaginal douches given. On the first day after the operation the patient should lie prone for several hours.

The eschar comes off on the eighth to the fifteenth day, and a new pencil is then usually inserted. The whole treatment therefore lasts about four weeks, after which the hemorrhages

and watery discharges are almost always checked.

Several complications may occur. Violent lumbar pains sometimes follow the application of the chloride of zinc, rarely lasting more than two or three days, but sometimes reappearing when the eschar comes off. Antipyrin usually controls these pains. Fever is extremely rare as a sequel. A relapse of the symptoms might occur, but no definite conclusions can be reached in regard to this matter, as the experiments conducted by Condamin and Repelin extend backward only five months, with the exception of one case, treated two years ago, in which no relapse has occurred. Stenosis or atresia of the uterine canal would be most likely to occur at the isthmus, and may be avoided by covering the part of the pencil in contact with this portion of the uterus with collodion. Stenosis of the cervix may be prevented by the precautions taken to prevent the pencil from slipping. The history of fifteen clinical cases is submitted in evidence of the efficacy of this method of treatment.

13. STAPFER: LOCALIZED AND PAINFUL CELLULITIS AND MYOCELLULITIS (Annales de Gyn. et d'Obst., July and August, 1893).

—The author writes in enthusiastic vein in regard to the value

of Thure Brandt's system of pelvic massage, not only as a method of treatment, but as a means of diagnosis in abdomino-pelvic affections. In his own practice he has by its means determined the existence of cellulitis of the walls of the abdomen and pelvis, which is not to be confounded with phlegmon, which is of frequent occurrence and is characterized by circumseribed edema, local pyrexia, acute pain, contractures in its neighborhood causing phantom tumors in the abdominal variety, and in the pelvic variety "parametrism" and pseudo-fixation of the organs. believes that it includes the affections variously described as parametritis, perioophoritis, perisalpingitis, interstitial salpingitis, perimetro-salpingitis, painful exudations, ilio-lumbar, lumbo-abdominal, and sacro-iliac neuralgias, which, having all a common etiology, might better be classified as cellulitis. The name is justifiable, since the affection is situated in the connective tissue and is accompanied, at least in the onset, by a local elevation of temperature, calor; swellings of variable aspect and consistence, tumor; pain which is oftentimes intense, dolor; although the fourth characteristic, rubor, is absent.

The seat of the cellulitis is the subcutaneous cellular tissue, probably also the interfibrillar connective-tissue spaces of muscles and the interstices of ligaments. The abdominal walls, the pelvic organs, walls and floor of the pelvis, are the favorite sites, but other portions of the body, as the anus, anterior and posterior surfaces of the chest, the inner surface of the thighs, sometimes the hands and the feet, may be affected. The localized cellulitis is divided by Stapfer into (1) abdominal subcutaneous, situated in the hypochondria, hips, epigastric and hypogastric regions, iliac and peri-umbilical regions; and (2) intrapelvic, in the posterior and lateral walls, floor, ligaments, uterus, and

adnexa.

The pathological anatomy is as yet unknown, the malady being one which causes intense suffering, but is not fatal.

The cause Stapfer believes to be a vaso-motor derangement. The cellulitis is a secondary affection, due to the stases produced

by affections of the uterus and appendages.

The subcutaneous variety is characterized by spots of edema varying in size from a millet seed to a walnut, scattered or agglomerated, unilateral or bilateral. They are excessively painful to the touch—this pain being the chief pathognomonic symptom.

In the intrapelvic variety the pain is also the most constant sign. When the floor and walls are the seat of the cellulitis, the pain occurs when the patient sits down, arises from a sitting posture, during or just after defecation, and even as a result of

enemata. Pressure causes intense agony.

The edema is variable in amount, and may be very soft or as hard as a piece of wood. Neither this form nor the subcutaneous pits upon pressure. The form may be that of the organ

which it surrounds (perisalpingian, periovarian, periligamentous), or may be like a swelling, or a triangular projection, seed-like, cord-like, or resembling a tumor. The edema is not symmetrical; it surrounds the uterus or the adnexa, is in the ligaments, the sacro-iliac walls, within the muscles of the pelvic floor, and especially in the ano-coccygeal attachment of the levator ani. Heat usually accompanies the onset of the affection, and returns at intervals during its course.

To recognize the abdominal subcutaneous cellulitis one should seize between the thumb and four fingers a fold of skin at different parts of the abdomen. This process is well known in locating the neuralgic points of Beau and Valleix, which, according to Stapfer, are simply nodules of cellulitis, which may be recognized as hard granules or puffy tumors, and aluays painful. The diagnosis of the intrapelvic cellulitis is more

complicated.

Cellulitis of the posterior surface of the uterus. A rectal examination will reveal swellings not to be confounded with

edematous Fallopian tubes.

Periovarian and perisalpingian cellulitis. By vaginal and rectal exploration the ovary is found to be soft or hard, and

surrounded by small intraligamentous tumors.

Intraligamentous cellulitis is easily perceived in the uterosacral ligaments, where it is most constant. A rectal examination will often reveal it as an edematous thickening accompanied by pain.

Parietal sacro-iliac cellulitis and cellulitis of the pelvic floor are also recognized by rectal examination. Localized pain upon

pressure establishes the diagnosis.

The differential diagnosis of cellulitis is between contractures in adjacent muscles caused by pain, and abdominal tumors. Myocellulitis of the pelvic floor may be mistaken for anal fissure.

The primary cause of the circulatory disorder must always be sought. Oöphoro-salpingitis is frequently the primary lesion. The course of cellulitis, if untreated, is apparently unending,

relegating the patient to the class of incurable sufferers.

Preventive treatment consists in the cure of metritis, in hygienic measures, in the avoidance of too frequent pregnancies. All measures tending to prevent congestion of the pelvic organs are useful, the most valuable of all being massage and gymnastics. In the abdominal variety the massage is to be performed around and between the painful spots, and finally very gently on the nodules themselves. Two or three minutes a day, with an occasional day of rest from treatment, will suffice. Patience and perseverance are essential, and the touch must be gentle, otherwise the trouble which we are seeking to cure will be aggravated.

Myocellulitis of the ischio-coccygeal, coccygeal, and anal

regions. Massage of this region is difficult. Rectal efflourage is the best procedure, or light vibratory pétrissage. For the latter maneuvre the patient is placed upon her side and the left index finger is introduced into the lower part of the rectum-Gentle percussion is then made upon this finger with the tips of the index, middle, and fourth fingers of the right hand, avoiding painful points. Rectal effleurage is likewise the method chosen for the treatment of cellulitis of the postero-lateral walls. In intraligamental cellulitis effleurage of the utero-sacral ligaments and the posterior fold of the broad ligament may be practised, but not pétrissage. Bimanual massage is essential. Gymnastic exercises appropriate to the individual case should form a part of the treatment. Stapfer contents himself with mentioning it, having described it in a previous article. He gives a detailed description of three cases of cellulitis treated by kinesitherapy. A. R. S.

14. Adenot: Traumatic Paralysis by Compression of the Sacral Plexus during Labor (Nouv. Arch. d'Obst. et de Gyn., November, 1893).—This form of paralysis is a much less frequent complication of labor than the hemiplegia, paraplegia, facial paralyses, etc., due to albuminuria. Some authorities—Churchill in especial—denythat pressure by the fetal head upon the sacral plexus can cause such a condition, and hold that all

paralyses are due to a general morbid condition.

Rare though it be, however, the existence of a paralysis of traumatic origin consecutive to difficult labor is generally admitted at the present day, the disputed point being as to whether the fetal head or the forceps is the agent of compression. Bianchi leans toward the opinion that it is the forceps, yet quotes the case of a patient who felt a numbness in her leg four hours before he applied the instrument. Burns and Jaccoud, quoted by Léon Tripier, state that the condition may occur after normal labor, but it is of exceptional occurrence. The principal nerves in the pelvic cavity are so distributed as to be practically protected from pressure during a natural labor—the crural by the psoas and iliac muscles, the sciatic by the sacro-vertebral angle. The sacral nerves are placed posteriorly, while the expulsive efforts upon the fetal head tend to drive it forward.

Weir Mitchell calls attention to the thickness of the sheaths surrounding the nerves in question, which serve as a further protection. Laville (with whom the author agrees) believes the paralysis due to pressure of a fetal head which has for some reason failed to execute the movement of rotation which would bring the occiput either forward to the pubis or backward in the concavity of the sacrum, in either of which positions the plexus is protected by the slight elevations of the sacro-vertebral articulation. When, however, the head fails to rotate, it is for a longer or shorter time in contact with the lateral grooves of

the sacrum, in which the nerves are situated. Pressure, sometimes long-sustained and forcible, might easily cause temporary or permanent paralysis. It is probable, although not certain, that the lumbo sacral nerve is the chief one to suffer. A. R. s.

15. Régis, E.: A Case of Insanity consecutive to an Oöphoro-salpingectomy (Nouv. Arch. d'Obst. et de Gyn., December, 1893).—The surgical treatment of insanity has up to the present time received no attention in France, nor have the ovaries been removed in any case as a therapentic measure. In other countries, and especially in the United States, however, oöphorectomy has recently been adopted to a great extent in insane asylums as a means of cure. But the majority of specialists on insanity in America hold that the operation has no favorable effect upon the mental condition, and many even condemn

it as inhuman, inexcusable, and unlawful mutilation.

Facts only can supply desired information as to the effect of removal of the tubes and ovaries upon the mental state of the insane. Unfortunately the cases on record are too few and not sufficiently convincing to permit of conclusive deductions. Moreover, even these few are used to support two diametrically opposed views. Dr. Alice Bennett out of six cases claims a physical and mental cure in three as a result of the operation; physical cure and amelioration of the mental state, with a probability of future recovery, in one; improvement as to convulsive seizures in a case of epilepsy of puerperal origin; and one death caused by peritonitis six days after the operation. On the other hand, Dr. Thomas G. Morton holds that not only is it impossible for oöphorectomy to have any beneficial effect upon pre-existing mental derangement, but that in previously sane persons it may determine the appearance of various neuroses and even of insanity.

Debove in 1892 reported a case of hysteria consecutive to ovariotomy, and Desnos stated that he had twice seen insanity follow the operation, which may be said, indeed, to be a two-edged sword, cutting into insanity upon the one hand and rea-

son upon the other.

Régis records the case of a married woman of 35 years, a person of limited intellect, but possessing good common sense, not specially well developed physically. The family history showed two remote cases of insanity, while her father had died of grief at the loss of a son. She herself had never had any serious illness, and showed no trace of syphilis or alcoholism. As the result of a miscarriage nine years previously she suffered from dysmenorrhea, abdominal pains, and frequently recurring peritonitis. In April, 1890, she could not walk; the abdomen was enlarged, puffy, and painful. A retro-uterine tumor projected into the rectum, at times completely occluding it. The tumor was painful to the touch, fluctuating and pulsating, and at times

causing tenesmus and a glairy, bloody discharge through the anus. During thirty months absolute rest in the dorsal position, hot vaginal injections, vaginal applications, frequent baths and vesications of the abdomen, were resorted to, but intra-uterine treatment was rendered impossible by an irreducible retroflexion. Finally, in October, 1892, a laparatomy was performed, adhesions broken down, and ovaries and tubes removed. They were found to be enlarged and congested, but showed no sign of cyst, abscess, or extravasation of blood. On section some white spots resembling tubercles were found. Recovery was in every way normal, so far as the physical condition was concerned, but eight days after the operation the patient began to manifest symptoms of psychical disturbance, such as delirium with hallucinations of a terrifying nature. Skulls and phantoms seemed to her to surround her, and various people, especially her physicians, she imagined to be hidden behind the curtains or in the fireplace. A few days later the condition was that of mental bewilderment with intellectual and physical torpor, melancholy. and hallucinations of a sombre nature. She seemed to herself to be full of malicious ideas and feelings, and was greatly distressed thereby, protesting that she had always been a good woman, incapable of backbiting or of evil action. In March, 1893, she was in a half-stupefied condition, apparently unconscious of what went on around her, and scarcely answering questions.

Régis held that the operation was chiefly responsible for the result, its action being due to physico-moral traumatism, the anesthetic, and more especially the changes in the organism caused by the removal of such important organs as the ovaries. As an experiment, injections of ovarian juice were begun on the 5th of April and continued daily until June. The amount of the dose varied from ten to forty minims of a one-tenth solution, and were followed by no pain, local discomfort, or general un-

favorable action.

By degrees the patient has ceased to be very excitable; she has resumed her ordinary occupations, superintends her household, and appears to have gained in strength. Her obsessions and hallucinations, although less frequent and less intense, are still marked, but she herself notices an improvement, and says that she is "now able to think of something else" and that she "has more sense." She no longer rushes from room to room exclaiming "Mon Dien," losing her temper and beating her children, nor does she cause scenes in the street. She still is tormented with malicious thoughts, and it is as yet impossible to say whether her recovery will ever be complete. The case is, however, of interest, first, because of the appearance of insanity, in one perhaps predisposed to it, consecutive to removal of tubes and ovary; and, second, because of the improvement in the physical and mental condition due to the treatment by daily injections of ovarian juice. A. R. S.

16. Bossi, L. M.: The Ecbolic Action of Sugar during LABOR (Annali di Ostetricia e Ginecologia, November, 1893). -From conclusions drawn by Prof. Mosso upon the action of sugar on voluntary muscles, the author determined to experiment with its action upon involuntary muscles. To test its effect upon uterine inertia he administered it in doses of four drachms dissolved in eight ounces of water, with the result that in ten out of eleven cases of inertia a positive ecbolic effect was obtained. Its action was apparent in from twenty-five to fortyfive minutes after its administration, and in most of the cases was of sufficient duration to insure spontaneous expulsion of the child. A second dose, administered two hours after the first, in several cases greatly augmented its activity. The contractions obtained were never tetanic, but perfectly regular. The placenta was in no case adherent. The experiments were, of course, too few in number to allow of positive deductions as to the value of sugar in cases of uterine inertia; nevertheless the indications are that it may prove a valuable therapeutic agent. Its action is rapid; the contractions produced are regular; there is no danger of tetanus of the uterus, with the possible complication of incarceration of fetal or placental parts, a peril which often follows the administration of ergot. Neither is there any danger of toxic effect upon either mother or child, and the substance may therefore be administered as often and at as short intervals as necessary. Furthermore, it may always be readily obtained in any family, a consideration of some importance in country places. Bossi hopes that the results of further experimentation may be his justification for publishing these not numerous cases.

17. Colombini, Pio: Ichthyol in the Cure of Blennorrhagia (Siena: Bernardino, 1893).—The greater part of this essay is devoted to a consideration of ichthyol as applied to gonorrhea in the male; it was, however, also used in thirty cases in the female. In acute vulvitis with painful erosions the application of cotton soaked in a five- or a ten-per-cent solution of the sulphoichthyolate of ammonia in glycerin caused a complete and speedy disappearance of the inflammation. In two cases acute inflammation of one of Bartholin's glands was cured. In four cases inflammation of the glandular follicles situated beneath the clitoris, around the meatus, and near the fourchette was cured in a short time.

In vaginitis, tampons impregnated with the solution were applied, or sometimes the solution was brushed over the parts, which had been previously dried. Improvement followed in every case. In urethritis a five- to ten-per-cent solution of ichthyol in water and glycerin was injected with a Langlebert syringe, causing amelioration in every case.

Cervical endometritis with ulcerations was completely cured

in from six to eight treatments with tampons soaked in a tenper cent solution of ichthyol in glycerin, while the same solution, carried in by means of gauze wrapped around a Playfair sound, cured endometritis of the body of the uterus. Where the cervix was insufficiently dilated to allow of this procedure, intra-uterine injections were made by means of a Bozeman double recurrent catheter.

Colombini believes ichthyol to be a most valuable method of treatment in blennorrhagia.

A. R. s.

18. Polacco, Romolo: The Use of Ichthyol in Gynecology (Milan: Lodovico Felice Cogliati).—Prefacing his report with a plea for conservative gynecology and with a history of the use of ichthyol, the author records 972 cases cured by himself and his colleagues in the Ospedale Maggiore of Milan in 1891 and up to March, 1892. The list is as follows: Eczema of vulva 3, pruritus of vulva 4, vaginitis 41, vaginal cicatrices 5, erosions of cervix 49, ectropion 12, hypertrophy of cervix 2, multiple lacerations of cervix 2, deep lacerations of cervix 9, cervical endometritis 25, bilateral laceration of cervix 7, endometritis 270, metritis 64, subinvolution 8, prolapse of the adnexa 15, oophorosalpingitis 43, double oophoro-salpingitis 6, salpingitis 4, ovaritis 8, peri-oöphoro salpingitis 41, periovaritis 9, perimetritis 148, parametritis 80, anteflexion and anteversion complicated by periand parametritis 85, retroflexion and retroversion complicated in the same way 31, hematocele 1.

The cases of eczema and pruritus were promptly cured in clinic; one case, which had for months resisted all treatment, was at once benefited by ichthyol soap. Cases of vulvitis were all secondary to urethritis, vaginitis, or to blennorrhagic urethrovaginitis, and the rapid cure effected by the drug was undoubtedly due to the constriction of the blood vessels which it caused. It is well to mix glycerin with the ichthyol. Sänger thus testifies to the value of the mixture used on tampons: "I use it extensively, and feel assured of its soothing effect, as well as of its absorbent action, even in the indurations due to exudations of long standing, a part of which absorbent action, however, I

ascribe to the glycerin."

Many of the cases of vaginitis were of blennorrhagic origin. The improvement was constant and prompt in every case. Cervical ulcerations were successfully treated by means of tampons impregnated with the ichthyol-glycerin solution, aided of course by general rest and abstention from intercourse. Simple cases are almost completely cured after eight or ten applications of a ten-per-cent solution, which thus forms a valuable means of diagnosis between simple and malignant growths.

Cervical endometritis yields readily to the treatment. Endometritis of the body of the uterus is sometimes too obstinate to be overcome by injections of ichthyol with a Braun syringe; in

such cases Polacco first curettes and then gives the injection. The drug is superior to iodine in that it causes no painful uterine contraction, nor any pain in the surrounding parts. Curetting alone may cure endometritis, but it does not secure against a return of the trouble; ichthyol will do so in a ten- or twenty-

per-cent solution.

Polacco tried the effect of ichthyol in several cases of perimetritis and parametritis in the acute stage, giving it by the mouth in doses not exceeding eleven and a half grains a day; by the skin in the form of a ten-per-cent ointment with vaselin (avoiding the umbilicus, which is easily irritated by this substance); and by the vagina with tampons impregnated in the solution.

After from two to four days of this treatment, combined with rest in bed and the use in moderation of saline purgatives, all pain ceased and symptoms of peritoneal sensitiveness disappeared; the fever gradually vanished, within a week at latest.

The absorbent effect of ichthyol was noted in cases treated in clinic and not treated again for from fifteen to twenty days. The exudations disappeared almost completely in the interval.

Polacco thus replies to the various objections which have been

made to the value of ichthyol:

1. Absence of absorbent action. This scarcely needs an answer, as nearly all authorities now agree in admitting that ichthyol possesses this power.

2. Its high price. As it is sold for thirty-four lire (\$6.80) for thirty-five ounces, and as it is used in a ten-per-cent or, at most, a twenty-per-cent solution, this objection is without foundation.

3. It stains the clothing. The stains are completely removed in one washing, leaving no trace, and in nowise injuring the

texture of the linen.

4. Its odor. This is truly not pleasing, yet there is nothing disgusting about it, and it may be entirely disguised by the use of vanilla or some volatile oil; and even when undisguised it does not permeate the atmosphere or the clothing, as does indoform for instance

Erythema was sometimes caused by the application of ichthyol in lanolin, but when used with vaselin instead no irritation

followed.

In conclusion, Polacco states:

1. Ichthyol is the most potent local analgesic known and

adopted in gynecologic therapeutics at the present day.

2. Ichthyol has a decided absorbent action upon exudations, manifested more rapidly when used in an early stage of the disease.

3. Ichthyol, considered as an analgesic and resolvent, is the most important of modern therapeutic acquisitions in gynecology.

19. Albertoletti: Ichthyol in the Treatment of Uteroovarian Diseases.—From experiments carried on in the Maria
Vittoria Hospital the author states that ichthyol in nearly every
case had a pronounced analgesic action, but in very few cases did
it cause the absorption of exudation. It was applied to the treatment of metritis, endometritis, salpingo-oöphoritis, and exudative perimetritis. The sulphoichthyolate of ammonia was the
preparation used, both externally and internally. Injections of
a solution in glycerin were made into the uterus by means of a
Braun syringe, and were so well tolerated that the author considers that in itself a sufficient reason for giving it the preference over other drugs used for the same purpose.

Perimetritis and parametritis with exudation and accompanied by pain were treated by means of friction on the abdomen with a ten-per-cent ointment of ichthyol in vaselin, and the

same ointment introduced into the vagina with tampons.

Internal treatment consisted of pills of 1½ grains each; a daily administration of from ten to twelve grains, continued for a fort-

night, never caused any noteworthy disturbance.

Iodine, on the contrary, causes gastro-intestinal disturbances, cutaneous lesions, toxic effects upon the kidneys in some cases. Why, then, should not ichthyol be used in preference?

A. R. S.

20. Pozzi, S.: A New Operation applicable to Congenital Stenosis of the Cervix Uteri (Annales de Gyn. et d'Obst., December, 1893).—This operation consists of three steps:

1. Bilateral section of the cervix with the scissors, forming two flaps, one anterior and the other posterior.

2. Excision of a prismatic and triangular strip from each lip of the incision.

3. Suture of the external mucosa to the mucosa of the cervical canal by means of silver wire.

By this process the stenosis is overcome and does not recur. The condition is somewhat similar to that following laceration of the cervix during labor, but as this reparative process is aseptic, as the union is by first intention, there is no cicatricial tissue, no chronic metritis, no concomitant laceration of adjacent tissues, consequently none of the functional troubles analogous to those described by Emmet as consecutive to laceration of the cervix.

A. R. S.

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ORIGINAL COMMUNICATIONS.

ON THE EXTRAPERITONEAL FORM OF EXTRA-UTERINE GESTATION.

BY

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(With one illustration.)

In any extra-uterine gestation at or beyond the fourth month we have to determine one special point as to its nature, viz., Is the gestation intraperitoneal or extraperitoneal? The most generally held opinion hitherto has been that such gestations were intraperitoneal, although the proof for this has been of the most vague character. There is no doubt that the fetus is often intraperitoneal, but that is no proof that the gestation is intraperitoneal. The position of the placenta alone determines the nature of the gestation, and the attachment of the placenta to the free surface of the peritoneum has never been demonstrated.

Evidence is now rapidly accumulating to the effect that extra-

uterine gestation at or beyond the fourth month 1 is extraperitoneal—i.e., while the fetus may be intraperitoneal or extraperitoneal, the placenta is always extraperitoneal.

The history of our knowledge of the extraperitoneal gestation is a very remarkable one. Dezéimiris in 1836 published in the Journal des Connaissances médico-chirurgicales an article which, owing to some delay on his part, was refused admission to the "Dictionnaire de Médecine," for which it was originally written. In this article Dezéimeris first described the special variety of extraperitoneal gestation under the name of "grossesse sous-péritonéo-pelvienne." As this valuable memoir is very inaccessible, I have reprinted what Dezéimiris says in regard to this form.

GROSSESSE SOUS-PÉRITONÉO-PELVIENNE.2

Je constitue sous ce nom un genre de grossesse extra-utérine trop différent de tous ceux qui sont décrits dans les ouvrages dogmatiques, sous le rapport du siège de la grossesse, des lois de son développement, des indications thérapeutiques qu'elle peut fournir, pour qu'il soit permis de les confondre. J'ai voulu marquer par cette dénomination ses caractères les plus importants, savoir: son siège en dehors du péritoine, et son développement, son séjour dans la cavité pelvienne. Cette grossesse est le développement de l'œuf entre les feuillets du ligament large. J'en connais plusieurs exemples; les suivants suffisent pour en constater l'existence et le siège.

Le docteur Loschge, professeur d'anatomie à Erlang, publia en

² SUBPERITONEAL-PELVIC PREGNANCY.

Under this heading I wish to describe a variety of extra-uterine pregnancy which differs too widely from those mentioned in the classical works, in relation to the seat of pregnancy, the laws of its development, and the therapeutic indications which it may furnish, to run any risk of being confounded with them. In choosing this particular title it is my wish to call attention to its most salient points—namely, its location within the peritoneum, its development and its continuance in the pelvic cavity. This form of pregnancy results from the development of the ovum between the folds of the broad ligament. I know of several cases. The following will suffice to demonstrate its existence and situation.

In 1818 Dr. Loschge, professor of anatomy at Erlangen, published in the Archives of Horn, Nasse, etc., the history of a case of extra-uterine pregnancy. The well-formed male fetus of five months, provided with its mem-

¹ I take this somewhat arbitrary date to exclude pure tubal and ovarian gestation.

1818, dans les Archives de Horn, Nasse, etc., la relation d'un cas de grossesse extra-utérine; le fœtus de l'âge de cinq mois, bien conformé, du sexe masculin, pourvu de ses membranes et de son placenta, fut trouvé dans l'épaisseur du ligament large. La dissection demontra que ce n'était ni une grossesse de la trompe, ni une grossesse de l'ovaire, mais que l'œuf s'était développé entre les feuillets du ligament large. Les parois du kyste s'étant déchirées à la partie inférieure, il s'en était suivi une hémorrhagie mortelle. Il n'y avait point de traces de l'existence d'un caduque dans l'utérus.

Je rapporterai un second cas de grossesse sous-péritonéopelvienne. On en sentira tout le poids quand je dirai que c'est Lobstein qui nous en a transmis la relation, et que la pièce se conserve encore dans le musée anatomique de la faculté de médecine de Strasbourg.

Une dame, encore éloignée de quinze jours du terme de sa grossesse, sujette à une fièvre hectique, par suite d'une inflammation chronique du péritoine, ressentit les douleurs de l'accouchement, se trouvant déjà dans le dernier degré de l'épuisement: elle y succomba. L'opération césarienne fut faite à l'instant même, dans la vue de sauver l'enfant; mais il était trop tard. L'examen des parties génitales internes fit voir les

branes and placenta, was found within the folds of the broad ligament. The autopsy demonstrated that it was neither a tubal nor ovarian pregnancy, but that the ovum had developed within the folds of the broad ligament. The walls of the cyst having ruptured in their inferior portion, a fatal hemorrhage ensued. There was not the slightest trace of a decidual membrane in the uterus (Arch. für die Erfahrung, etc., von Horn, Nasse und Henke, 1818. Med.-chir. Zeitung, 1820, t. i., p. 380).

The importance of the second case which I shall mention will be at once realized when I state that the history of it comes from Lobstein, and that the specimen is preserved in the anatomical museum of the "Faculté de Médicine" in Strasbourg.

The patient, who was within fifteen days of term, and who through chronic peritonitis was subject to hectic fever, was taken with labor pains, and, owing to her already enfeebled condition, succumbed to them. In the hope of saving the child Cesarean section was at once performed, but fruitlessly. An examination of the internal genital organs gave the following result: The uterus, which was larger than usual, was seven and a half inches long, five and a third broad at the fundus, and its walls about three-quarters of an inch thick; the longest diameter of the cavity was about three and a fifth inches. In this case, as is usual in extra-uterine pregnancy, the inner sur-

¹ Archiv für die Erfahrung, etc., von Horn, Nasse und Henke, 1818. Med.-chir. Zeitung, 1820, t. i., p. 380.

particularités suivantes: la matrice, plus volumineuse qu'à l'ordinaire, avait sept pouces de longueur, cinq pouces de largeur à son fond, et neuf lignes d'épaisseur dans ses parois; le plus grand diamètre de sa cavité était de trois pouces. Ici, comme cela a lieu dans les cas de grossesse extra-utérine, l'intérieur de la matrice était tapissé de la membrane caduque. Au côté gauche de la matrice se trouvait un vaste sac qui servait de reservoir au fœtus; ce sac était adhérent à tout ce côté de la matrice, depuis son fond jusqu'à son col. Il avait une forme ronde et un diamètre de neuf pouces; mais ses parois n'avaient qu'une demi-ligne d'épaisseur. Ce réceptacle, ou cette fausse matrice, était placée entre les feuillets du ligament large. La trompe et le ligament de l'ovaire avaient gagnés plus d'extension et plus d'ampleur; l'un et l'autre s'épanouissaient sur le kyste et étaient, pour ainsi dire, changés en un plan fibro-musculeux. On remarquait çà et là, à la surface du kyste, des fausses membranes celluleuses qui l'unissaient d'une manière lâche aux parties environnantes, et on voyait, de plus, sous sa tunique externe, des rameaux veineux parfaitement semblables à ceux qui rampent sur la membrane externe d'une matrice en état de gestation. Le sac lui-même était formé de deux feuillets membraneux, lisses et minces, contigüs l'un et l'autre et laissant entre eux des espaces plus ou moins grands; la face interne de ce même sac était tapissée d'une couche de matière jaunâtre de nature fibrinense, et qui l'unissait à la surface externe des

face of the uterus was lined with a decidual membrane. At the left side of the uterus, and adhering to it from fundus to cervix, was a large sac which served as a receptacle for the fetus. It was round in shape and nine and a half inches in diameter, but its walls were only one-twenty-fifth of an inch in thickness. This receptacle or false uterus was situated between the folds of the broad ligament. The tube and the ovarian ligament were increased in both length and width; both were spread out upon the cyst and were transformed into a sort of flattened fibro-muscular covering. Here and there upon the surface of the cyst were false membranes, composed of cellular tissue, which loosely bound it to adjacent parts; under its external coat could, moreover, be seen branching veins exactly similar to those which wind about the external membrane of a pregnant uterus. The sac itself was composed of two membranous, smooth, thin folds, which, while contiguous with each other, were here and there separated by spaces of varying size; the internal surface of this sac was lived with a layer of a yellowish substance of fibrous nature, which united it to the external surface of the membranes and placenta. The latter was in place and completely adherent to the posterior wall of the sac representing the uterus. It was a battledore placenta, oval in form, seven and a half inches in its longest diameter, six and two-fifths in the shortest diameter. membranes et du placenta. Celui-ci était encore en place et partout adhérent à la paroi postérieure du sac représentant la matrice. Il était en raquette, d'une forme ovulaire, et avait sept pouces dans son long diamètre et six pouces dans le petit; les vaisseaux formant les racines du cordon ombilical étaient extrêmement dilatées; quelques-uns avaient jusqu'à sept lignes de diamètre. Le placenta adhérait à la paroi postérieure du sac, de la même manière que s'il avait été attaché à la matrice, excepté que cette paroi était aussi mince que le reste du sac qu'elle n'offrait aucun tissu spongieux.'

Ces faits me paraissent suffisants pour légitimer l'admission d'une grossesse sous-péritonéo-pelvienne; d'une grossesse qui n'est ni ovarique, ni tubaire, et qui, si l'on peut s'exprimer ainsi, est moins abdominale qu'aucune autre, puisque, placée, au premier temps de son existence, en dehors du péritoine, les progrès de son développement ne paraissent point devoir l'y faire pénétrer, mais au contraire le ligament large, en se développant à mesure que le produit de la conception grossit dans la cavité pelvienne, doit former une sorte de plancher qui l'y retient et qui lui ferme l'entrée dans la cavité abdominale. Je n'ai pas besoin de dire ici tout ce qu'il y a d'essentiel dans cette circonstance, et de signaler en ce moment l'importance pratique qui s'attache, précisément à cause d'elle, à l'étude de la grossesse sous-péritonéo-pelvienne, comme espèce particulière de grossesse extra-utérine; nous aurons à revenir plus loin là-dessus. J'en-

The vessels forming the root of the umbilical cord were extremely dilated, some of them being half an inch thick. The placenta was adherent to the posterior wall of the sac, exactly as it might have been to the uterus, except that the wall, being as thin as the remainder of the sac, possessed no spongy tissue (Lobstein: Report to the Faculté de Médecine of Strasbourg upon Anatomical Works, etc., Strasbourg, 1824, in 8vo, p. 48).

These cases seem to me sufficiently convincing to warrant the admission of the existence of a subperitoneal-pelvic pregnancy—a pregnancy which is neither ovarian nor tubal, and which, if we may so express ourselves, is less abdominal than other varieties, because, placed from its very inception outside of the peritoneum, it does not in the course of its development enter within this membrane; on the contrary, the broad ligament, which increases in size at the same time that the fetus develops within the pelvic cavity, must form a sort of roof which confines it within the pelvis and prevents its entrance into the abdominal cavity. There is no need that I should in this place point out the importance of this circumstance, nor its practical bearing upon the

¹Lobstein: Compte-rendu à la Faculté de Médecine de Strasbourg sur les travaux anatomiques, etc., etc., Strasbourg, 1824, in 8vo, p. 48.

gagerai seulement le lecteur à examiner les cas nombreux que l'on possède de grossesses extra-utérines terminées par l'élimination du produit de la conception, soit par le vagin, soit par la voie des selles, et il lui sera facile de s'assurer que ceux de ces cas dans lesquels les désordres sont restés le plus exactement limités dans la cavité pelvienne, sont justement des grossesses de l'espèce dont nous nous occupons. Qu'on prenne la peine de lire, par exemple, l'observation de la femme Lefort, publiée par Bergerot dans le Recueil périodique de la Société de Médecine (thermidor an x), ou par Baudelocque, dans son "Art des Accouchements," et il sera maintenant facile d'y reconnaître une grossesse sous-péritonéo-pelvienne. Le dernier de ces ouvrages est entre les mains de tout le monde, et il serait superflu de rapporter ici en raccourei une observation dont on peut y voir les détails.

Je crois pouvoir citer aussi, comme cas de grossesse sous-péritonéo-pelvienne, une observation de J. Major Wilson, qui sera donnée plus loin par extrait, mais dont je n'ai pas les détails sous la main.

Si l'on veut relire l'observation publiée par Noël dans le tome ii. de l'ancien *Journal de Médecine*, sous le titre de "Grossesse vaginale," observation citée bien des fois depuis lors, mais toujours restée inintelligible, on y reconnaîtra, je

study of subperitoneal-pelvic pregnancy as a particular form of extra-uterine pregnancy. We will return to the subject later on. I will only ask the reader to study the cases on record of extra-uterine pregnancies terminating either by elimination of the products of conception through the vagina or in the dejecta, and it will be easy for him to satisfy himself of the fact that the cases in which the disorder was most strictly limited to the pelvic cavity belonged to the class of pregnancy which we have under consideration. Let him, for example, take the trouble to read the report of the woman Lefort, published by Bergeret in the Recueil périodique de la Société de Médecine (thermidor tenth year), or that of Baudelocque in his "Art des Accouchements" (vol. ii., pp. 456-464, 6th edition), and he will readily recognize by the description a subperitoneal-pelvic pregnancy. The last-named work is in general circulation, and it would be superfluous to give in this place an abstract of what can there be read in detail.

I think that I am also warranted in quoting as a case of subperitoneal-pelvic pregnancy a case reported by J. Major Wilson, of which I will give an abstract later, not having the details in hand at the present moment.

The report of a case published by Noël in the second volume of the old Journal de Médecine, under the name of "Vaginal Pregnancy," has often been quoted since his day, but has always been quite incomprehensible; read-

¹ T. ii., p. 456-464, 6e édition.

pense, une grossesse sous-péritonéo-pelvienne, et il sera dès lors facile d'en comprendre tout le mervéilleux.

Je répète que la grossesse sous-péritonéo-pelvienne me paraît n'être point une grossesse extra-utérine rare.

It will be seen from this that Dezéimeris bases the existence of this variety on two cases by Loschge of Erlangen, and Lobstein, and he also draws attention to the frequency of the termination of extra-uterine gestation by elimination through the vagina and rectum. This account is so clear that it is a mystery that it attracted little or no attention for long.

In England, as early as 1874, Mr. Tait drew attention to Dezéimeris' views and pointed out their great importance. In 1883, along with the late Dr. Carter, I demonstrated by frozen sectional anatomy a broad-ligament pregnancy and also a full-time extra-uterine pregnancy in an intact cadaver, and showed that in both the gestation was extraperitoneal. Since then corroborative cases have been published by Griffiths, Bland Sutton, J. W. Taylor, and others.

In Germany a very comprehensive mémoir has been published by Werth, and cases by Breisky, Schauta, Olshausen, Lusk, and many others have been recorded. Olshausen's paper gives an account of several operative cases and is very valuable.

I purpose now considering some points in the development of this extraperitoneal form, especially in reference to:

- 1. Its anatomy in relation to the relative positions of fetus and placenta.
 - 2. The microscopical anatomy of the placenta; and
 - 3. The treatment in special cases.
- 1. Its Anatomy in relation to the Relative Positions of Fetus and Placenta.—In the extraperitoneal form we have the placenta developing in connective tissue, and the formation of a rapidly growing fetus. The relations of these to one another are practically four, viz.: (a) the fetus may lie above the placenta; (b) the fetus may lie below the placenta; (c) the

ing it with our present knowledge, it will be easy to recognize a subperitoneal-pelvic pregnancy, and whatever was surprising in it will be readily understood.

I repeat that subperitoneal-pelvic pregnancy seems to me to be not a rare form of extra-uterine pregnancy.

A. R. S.

placenta may be in front of or (d) behind the fetns.¹ These relations are of the greatest importance. All extraperitoneal gestations begin as tubal pregnancies. As the gestation grows, the folds of the broad ligament are separated to accommodate the developing ovum, and in certain cases the peritoneum remains intact even in advanced gestation, and when rupture takes place the fetus only escapes as a rule into the cavity (secondary gestation). The fetus increases, however, much more in bulk relatively to the placenta, and we get, in those cases where the placenta lies above the fetus, a great displacement of the former, its conversion into blood clot and blood crystals, death of the fetus and its discharge by bowel, etc.

When the relative position is such that the fetus lies above, we get much less displacement; and where the placenta lies in front (or behind), comparatively little disturbance and a good placenta. One very important point in regard to the placenta is its relation to bowel. When near bowel it may decompose after the death of the fetus; in certain cases it does not decompose, but becomes absorbed, and in such its distance from bowel allows this. We are, however, as yet without accurate information as to this point.

In extraperitoneal gestation a sac wall, more or less complete, may be present and may contain unstriped muscle. A well-marked sac wall was present in Barbour's case, which was probably extraperitoneal.

Drawings already published by me illustrate the points advanced. In certain cases the gestation has become more or less pediculated.

2. The Microscopical Anatomy of the Placenta.—It is of importance, in the first place, to state my views as to the nature of the normal human placenta. Here again we have views, advocated by authorities deservedly high, which have led to error in regard to the extra-uterine placenta. For the formation of the necessary elements of the placenta we require on the one hand the fetal villi, on the other the metamorphosed mucous membrane of the uterus, the decidua serotina. The columnar epithelium of the latter has hitherto been regarded of importance, as it is supposed that the single layer of columnar cells covering the villi of the placenta in the later months is maternal, is derived from the serotinal free surface or from the glands, and

¹ I have seen the relations in (a), (b), and (c).

that the fetal epithelial covering has disappeared. The supposed necessity for an epithelial covering to the villi, not fetal, but derived from the mother, has led to the supposition that in the so-called abdominal extra-uterine gestation the peritoneum formed the maternal part of the placenta, and that therefore in abdominal gestation the fertilized ovum passed into the peritoneal cavity and found an admirable serotina in the peritoneum. Freund, of Strassburg, has satirized this well as follows:

"Regarding the place of attachment of the fertilized ovum to the tissues outside the uterus, and regarding the structure of the placenta there, we have no addition to the old observations nor exact histological facts. After the noise as to the disputed possibility of ovarian and abdominal gestation has been settled by the incontrovertible fact of the existence of such pregnancies, nowadays the attempt has been made to represent the whole question of the ovum implantation and the placental formation on the various extra-uterine tissues as perfectly intelligible and in harmony with the newest histological views. Thus the theca folliculi is considered as a bed which contains the elements of a mucous membrane, and which is thus quite suited for the nidation of an ovulum. The placental formation on the peritoneum near the ovaries and tubes is held to be plausible in view of the fact that this region stands in a certain genetic relation with the germinal epithelium, and that this is necessarily only a process going on in a connective-tissue substratum. Who feels here firm ground under his feet? Who would further maintain the correspondence of the implantation of the ovum on the peritoneum with the adhesions of foreign bodies and tumors in the abdominal cavity? Here, surely, other circumstances come under consideration. Those who delight in analogies may here advance the later and latest histogenetic views regarding the peritoneum. They may point out that in the amphioxus, lanceolatus, in the gephyrea and other animals, the whole peritoneal cavity, by means of its epithelium, takes part in the development of the ovum epithelium. Waldeyer and others, indeed, recently have affirmed the most internal covering of the peritoneum to be epithelium, which is supposed to have adapted itself to the changed condition and has morphologically altered. This epithelium would belong to the archiblasts, like all epithelial muscle and nerve cells. As the peritoneum, according to this, approaches mucous membrane in

structure, the attachment of the fertilized ovum is not contrary to reason. There even is, histologically, no cause for astonishment if a woman with a diaphragmatic hernia should have a fertilized ovum nestled on the pleura, or, in the literal sense of the term, under the heart, or even in the pericardial sac, were that accessible, and, so far as is reconcilable with her respiration and circulation, should bring it to full development. Moreover, if any one gives rein to his fancy to have a say in earnest investigations, he may unweariedly rise yet higher. The uterine milk, which has lately been recognized as an important link in the chain of organic devices for the nourishment of the child, and whether it be derived from the leucocytes or decidual cells, could just as well be imagined as being formed from the histological elements of the peritoneum. The rapid growth of the connective and vascular tissue of the maternal structures for the purpose of fixing and nourishing the ovum, when we look at the growth and nourishment of any living material introduced into the peritoneal cavity, is, as it seems, a perfectly obvious phenomenon. For, if we sum up all that is required on the mother's part for the commencement and continuation of pregnancy, we seek for nothing more than a comfortable, well-closed-in nest of tissue, a continuous attachment for forty weeks, and, for the purpose of respiration and nutrition of the fetus, a new development of blood vessels in communication with the vascular system of the child; then the peritoneum appears in every particular remarkably adapted for this. The peritoneal cavity is just a favorite place for experimenters who wish to study the subject of transplantation of parts of tissue and even of entire organs. So the modern clinician might content himself, as regards the occurrence and continuation of extra-uterine pregnancy, with the histogenetic line of thought now stated. But this goes on the assumption that we here deal only with conclusions from analogy; and who does not know, from many examples out of various departments of medicine, how uncertain and deceptive such conclusions are?"

The comparative anatomy of the placenta has, however, shown that the early fertilized ovum in the hedgehog, rabbit, and other animals absorbs the columnar epithelium of the mucosa and finds in the connective-tissue elements the necessary basis for its serotina. In a recent research on the structure of the human placenta, Dr. Gulland and I came to the conclusion that the

necessary elements for placenta were on the one hand the fetal villi, on the other hand the connective tissue of the serotina; that the covering of the villi was entirely and always fetal; and that the villi at their tips had an active phagocytic action.

This agrees, as we shall see, with the needs of the placenta in extraperitoneal gestation. In its early tubal stage we do not know what relation it bears to the epithelium, or whether, indeed, epithelium is present at the site of its earliest growth. In the later stages, however, it develops entirely in relation to connective tissue—a development quite in accord with the opinions I have advanced as to the structure of the normal human placenta.

The main structure of the extraperitoneal placenta depends on whether in its growth it is displaced or not. When not displaced, as in one of my cases, its structure, so far as the villi are concerned, is as perfect as that of a normal placenta. Any considerable amount of displacement alters this, however, causes blood effusion and organization, so that in extreme cases the placenta may be a mass of blood crystals, organized connective tissue, and compressed and distorted villi.

I believe, then, that the extraperitoneal development of the placenta is quite in accordance with modern views of the structure of the human placenta, and the belief that the extra-uterine placenta in so-called abdominal cases has developed on peritoneal epithelium quite unwarranted.

3. In the treatment of advanced extra-uterine gestation no hard-and-fast rule can be laid down. There is no doubt in my mind that operative treatment is indicated and that all attempts to cure by means of electricity, morphia, etc., are effete, or should be. All are agreed that when abdominal section is performed the fetus should be removed. The difficulty is to treat the placenta. If untouched it may give no trouble (Jessop, Braithwaite), but in most cases it sets up sepsis when left. It may be possible to remove the entire gestation by ligature and partial enucleation (Breisky), or to enucleate the sac, as Olshausen recommends, after preliminary ligature of the ovarian and uterine arteries.

Another plan is to separate the placenta, but in many cases the hemorrhage is so severe as to deter the operator. The case I now record shows, however, that this can be done with comparative safety when the iodoform tampon is employed, and that the placenta can be removed on successive days with advantage. Indeed, in certain cases I do not see why one should not incise the sac abdominally and remove the fetus, plug the sac with iodoform gauze, and then remove the compressed placenta in two days or so.

The special case is as follows:

Case of Extra-uterine Extraperitoneal Pregnancy operated on at the Fourth Month.—My reason for narrating this case is not only its comparative rarity, but also the encouragement it gives to operative treatment in such.

During the night of the 11th of January, 1893, I was called to see Mrs. A., who had been seized with sudden pain, faintness, and collapse. As I was aware she had passed two periods, I fully expected that a Fallopian-tube pregnancy had ruptured intraperitoneally, but did not find on my arrival the collapse one would have expected. Internal examination was negative, and I therefore administered a sedative and postponed examination under chloroform till next day.

I then found the uterus retroverted, enlarged, and lying to the left. There was no appreciable intraperitoneal effusion nor hematoma, and I therefore abandoned all idea of ruptured gestation. I may mention here that the patient had one child 6 years old, and that during the pregnancy there was a subperitoneal fibroid, about the size of an egg, on the left side of the fundus. Any thickening I felt during this examination I attributed to this, and the stoutness of the patient also hindered investigation. Ten days afterward there was some uterine hemorrhage with dilated cervix, and I curetted away decidual shreds, but this I attributed to ordinary abortion.

The patient's condition did not improve after this. Spasmodic and severe pains came on, which I could only vaguely ascribe to renal or hepatic colic. During March, however, a tumor developed at the right iliac margin, gradually increased toward the middle line, so as to drive me to a reconsideration of the whole case.

The condition at the end of March was thus as follows: There was amenorrhea for about four and a half months; a history of collapse with shreddy discharge at the second month and occasional subsequent attacks of spasmodic pain; a tumor spreading from the right iliac fossa and now mesial, with its top two finger breadths below the navel. Over the lower part of this

tumor a bruit could be heard, and milk was present in the breasts. I was therefore driven to the conclusion that I had here an extra-uterine gestation developing extraperitoneally. This diagnosis explained all the facts. The rupture at the second month had been into the right broad ligament, and the gestation had then developed between its layers until it attained the condition and relations given above. For a month I had been completely at fault, and only saw land after much puzzling. What misled me most was the negative result of my examination on the day subsequent to the rupture. During this time I had the valuable help and advice of Drs. G. W. Balfour and C. E. Underhill.

Such being the diagnosis, the question of treatment had to be faced at once. The patient was in excellent health and had an amount of energy and pluck that made me feel certain she would stand operative treatment well.

There was no doubt in my mind that delay was dangerous. Hemorrhage was going on in the sac, as it had increased in size latterly very rapidly, and it might rupture soon. Even if that did not happen there was the risk of the death of the fetus and its discharge by rectum or bladder. I accordingly advised operation strongly, and it was agreed to.

I must now state what I believed to be the relations of the organs. The uterus was retroverted and to the left. The gestation was developing partly in the broad ligament and pelvic connective tissue, and lay mesially behind the bladder. The fundus of the sac was free from placenta; this was of importance, as it gave me access without risk of hemorrhage so far as the incision was concerned. What I thought I might do was to incise the abdomen, ascertain the relations of the sac. If extraperitoneal I would cut into it, remove fetus and placenta, and plug with iodoform gauze. If found pediculated, which I did not anticipate, I would ligature and remove entire, if possible.

Accordingly on the 30th of March I operated as follows, with the assistance of Drs. J. C. Webster, Gulland, and Lawson Dick. I made a mesial incision in the abdominal wall ending two inches above the pubes and about four inches in length. When the abdomen was opened I came on the top of the sac, covered with peritoneum, and with the abdominal reflexion high. I incised the peritoneum over the sac, stripped it to the sides, and thus exposed the upper connective-tissue environment of the gesta-

tion—i.e., the top of the sac. I had thus opened into the abdominal cavity at the upper part of the incision, and also exposed the extraperitoneal gestation. I next tapped the sac with an aspirator needle, but got neither fluid nor blood. I therefore laid the sac open, cutting through a friable, pigmented half-inchthick wall, and found blood clot occupying a sac about the size of a large orange, placenta on the anterior wall, and no fetus so far as I could make out. I cleared out the clots and separated the placenta, hoping to feel the fetus then. Bleeding, however, was somewhat profuse, and so, after separating an apparently perfectly fresh piece of placenta about the size of the palm of my hand, I had to tampon the sac with gauze, close off the peritoneal cavity, and stitch the gestation-sac opening to the abdominal wound. This latter stitching was really unnecessary.

The patient was in no way disturbed by all this, but I myself had some puzzling points to settle. In the first place, the sac was not so large and did not dip so deeply as I knew it must; then, secondly, where was the fetus? The placenta was fresh and normal in appearance. Had I believed that the placenta could grow after the early fetus had died, all would have been clear; but this was, in my opinion, an untenable theory.

On the sixth day after (4th of April) I removed the gauze in part, and on the 6th of April I removed it all, and then felt at the bottom an opening about the size of a crown piece, with the membranes and liquor amnii bulging. I ruptured them and came on the head of the fetus. Pushing a pair of ovariotomy forceps through it, I then extracted a fresh four and a half months fetus, and found a lower cavity with placenta on the anterior wall.

I washed out the cavity, plugged it with gauze, and next day, on removing the plug, cleared out the rest of the placenta, the main piece being the size of the palm. I could then explore the sac digitally, and found it to be hourglass-shaped, the cavities being upper and lower with a circular opening between. The fetus and membranes lay in the lower, and the placenta lined the anterior wall of both compartments. The deepest part of the sac touched the sacrum. The gestation had thus begun in the Fallopian tube, developed in the broad ligament, lifting up the anterior lamina mainly and burrowing more deeply toward the sacrum. The placenta was in a favorable position, and had not been displaced much by the growing fetus.

The after-progress of the case was slow but good. Drainage was kept up for a month and irrigation freely used. In this way placental débris was washed out and occasionally small pieces of placenta. On one or two occasions, prior to the separation of a small piece of placenta the patient had a slight rigor, but this passed off whenever the sac was washed out. I should mention that in the second week there was some phlegmasia of the left leg.

The patient was completely well in about seven weeks after operation. It was remarkable how the sac slowly contracted and ultimately completely closed. As the contraction went on, the vertical position of the tube slowly changed into a right-sided and oblique one, indicating how in natural healing the original position of the organs is resumed.

In this case both fetus and placenta developed extraperitoneally. In all cases of extra-uterine gestation the site of the placenta determines the nature of the gestation. The fetus may become intraperitoneal after being tubal or extraperitoneal, but, as a rule which as yet knows no exception, the placenta, while arising in the tube and developing in the connective tissue of the pelvis, does not become intraperitoneal in the sense of ever grafting itself on the free surface of the peritoneum.

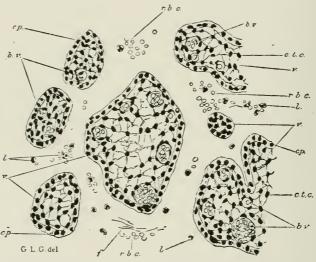
I wish to emphasize, in conclusion, my belief that the treatment of extra-uterine gestation in such cases must be operative, and that the operation should be undertaken as soon as possible. In early non-pediculated cases such as this the fear of hemorrhage from the necessary separation of the placenta is irrational. One can separate and plug the sac with gauze; and if entire separation is impossible at first, it can be completed in a few days afterward. The opening into the sac should be left large, and it will be found that drainage goes on perfectly by means of the gauze until a glass tube can be substituted.

The following is Dr. Gulland's report of the structure of the placenta:

"I received from Dr. Hart two pieces of the placenta of this case—one which was removed at the time of the operation, the other removed seven days afterward. These were both fixed in saturated sublimate solution immediately after removal, and pieces of them were hardened, cut in paraffin, and mounted in the usual way.

"The piece of placenta removed at the operation was perfectly

normal, as far as the fetal structures were concerned (see figure). The villi were exactly like those of a normal four and one-half months placenta which is in my possession, both as to their arrangement and their microscopical structure. They were covered by a single layer of well-preserved cubical epithelium; the connective-tissue core of the villi consisted of retiform tissue—connective-tissue corpuscles lying on fine fibrils; and the vessels in the villi were filled with fetal blood corpuscles. The intervillous spaces were not so near the normal. Most of the maternal blood had of course drained out of them as the placenta was being removed piecemeal, but a certain amount was



Part of the placenta of an extra-uterine pregnancy (four and one-half months) removed at the operation. v, villus; b.v, blood vessel (fetal); cp, epithelium covering the villus; c.t.c., connective-tissue corpuscle; l, leucocyte; r.b.c., red blood corpuscles (maternal) in intervillous spaces; f, fibrin. Obj. Zeiss DD, Oc. 4.

still to be seen in the sections. In addition, however, there were a few delicate threads of fibrin which might have been recently formed, and here and there through the placenta were larger masses of fibrin, some almost as large as a pea. These were evidently the result of an old clotting of the maternal blood; the masses of fibrin sometimes surrounded a villus or two, and had compressed them, and the fibrin was riddled with leucocytes.

"The pieces of placenta removed during the after-treatment were very different in appearance. They were firm, dark-brown masses, evidently composed largely of blood clot, and when sectioned it was found that the greater amount of the tissue consisted of this material. The villi had been crushed and distorted, and in many cases widely separated by the hemorrhage. The epithelial covering of the villi was not so distinct as in the former specimens, and both its nuclei and those of the connective tissue of the villi were markedly degenerated. The fibrils of the connective tissue, instead of the delicate network which they normally present, were in a state of hyaline degeneration and greatly swollen; the blood vessels could not be distinguished. The intervillous spaces were filled with dense masses of fibrin, in the meshes of which the outlines of degenerated red blood corpuscles could be made out; there were a fair number of leucocytes also to be seen.

"These specimens are instructive as showing the perfectly normal way in which the villi develop in extra-uterine gestation, and also the way in which they are altered by the death or removal of the fetus and by hemorrhage."

29 CHARLOTTE SQUARE.

CLINICAL CONTRIBUTIONS TO ABDOMINAL SURGERY.

BY

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(With seven illustrations.)

THE cases here reported by me have come under my observation recently, and are of sufficient interest and importance, in my estimation, to justify their publication. They comprise the following:

- 1. Six cases of celiotomy for ectopic pregnancy, all of which occurred during the past twelve months, four of them, indeed, with the mysterious habit of rare cases, within four weeks (January 25th to February 23d, 1894). All the patients recovered.
 - 2. A large double pyosalpinx; recovery.
 - 3. Epithelioma of the corporeal endometrium, with fibroids of

the body; vaginal hysterectomy; recovery; relapse six months later.

- 4. Sarcoma of the body of the uterus, with small fibroids; complete abdominal hysterectomy; practical recovery from operation; death after five weeks from the consequences of an old esophageal stricture and gastric diverticulum.
- 5. Abscess of the ovary with perforation into the large intestine; enucleation of the abscess sac; suture of opening in the bowel; recovery.
 - 1. Six cases of Celiotomy for Ectopic Pregnancy.

 Case I. was seen in consultation with Dr. Henry Hyman on

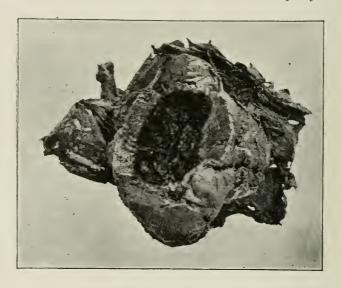


Fig. 1.—Ruptured tubal pregnancy (Case 1).

April 3d, 1893. The patient, a multipara, had last menstruated ten weeks before; she passed some blood with shreds for the last three weeks, and frequent intermittent colicky pains were felt in the left ovarian region. Examination showed a well-defined tumor of the size of an orange to the left of the uterus, which tumor pulsated slightly. There had been no sign of rupture or intraperitoneal hemorrhage. The diagnosis of tubal pregnancy was made, operation advised and carried out two days later. On opening the abdominal cavity thin, grumous blood and coagula at once poured out, showing that the sac had ruptured either some time before or during the preparations for the

operation. The former is probable, since, when the patient was put in Trendelenburg's position, many of the coagula were found loosely adherent in Douglas' pouch. The tubal sac and ovary were ligated and removed, the loose blood and coagula thoroughly washed out, and the wound closed without drainage. Recovery uneventful. There was no fetus found, but a remnant of umbilical cord one inch in length hung from the centre of the sac. Evidéntly hemorrhages into the sac had taken place before the rupture (Fig. 1).

Case II., 28 years, mother of one child 8 years of age, was sent to my office on November 22d, 1893, by her physician,

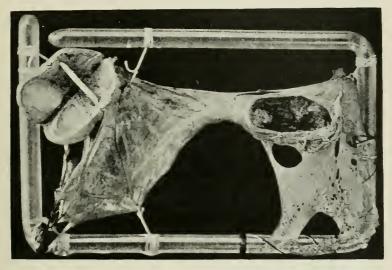


Fig. 2.—Ruptured tubal pregnancy (Case 2). Ruptured tubal sac to right, split ovary to left.

Dr. S. Schaie. She last menstruated on September 11th; coition was first practised on September 18th, and was attended by so violent an orgasm on the part of the wife that both parties remarked that now or never conception must have taken place. The next menstrual period was missed, and for three weeks there had been irregular bloody discharges, attended by frequent sharp, darting pains on the right side of the lower abdomen. Examination showed the uterus somewhat enlarged, tipped to the left, not freely movable, left broad ligament tense and contracted; on right side a tense, fluctuating, pulsating, and very tender mass of the size and shape of an egg. Uterus mea-

sured three and a half inches in depth, its rather large size being probably due to a fibroid in its left wall. The diagnosis of tubal pregnancy was made and immediate operation advised. Two days later the operation was performed; and it was fortunate that it was not postponed any longer, since, on lifting up the tubal sac to get at the pedicle, it broke and a severe hemorrhage took place. The ovum was developed so close to the uterus that it was necessary to pass the ligatures through uterine tissue. The fundus uteri was stitched to the abdominal wall with two deep silkworm-gut sutures. The left ovary was found atrophic and so firmly adherent that it could not be removed. Except a stitch-hole abscess, the patient made a good recovery (Fig. 2).

Case III.—The third case was seen by me in consultation with Dr. Lewinthal three weeks before operation, and, the diagnosis being very doubtful, I advised watching the swelling in Douglas' pouch, and, in case it increased in size, operating. was informed the day before operation that the mass had increased very perceptibly and that the uterine oozing continued. Finding on examination a very decided enlargement of the swelling to the left of the uterus, I thought best to operate without delay. There were numerous adhesions to the intestines, which required suture of the peritoneal coat of the latter. The specimen showed a tubal sac, which ruptured on removal, but which contained blood both grumous and coagulated, and which, judging from the history, in all probability was of ectopic origin. Indeed, hematosalpinx is, without question, usually due to tubal pregnancy. In this case there was a doubtful history of abortion and the discharge of pieces of membrane and coagula. The physical signs all indicated ectopic pregnancy. The absence of a fetus among the coagula found in the abdominal cavity by no means disproves the possibility of a tubal pregnancy, since the small embryo in these cases usually escapes notice among the diffuse clots, or has been absorbed before operation. Recovery was uneventful.

In justice to the physicians who called me to these three cases, I should say that in each instance the possibility of ectopic pregnancy was suspected by them before I saw the patient.

Case IV.—The fourth case was in a married woman, 34 years of age, mother of five children, who was supposed to have miscarried at three months, four months before, since when she had been bleeding. She had pain in the left iliac region for about

six weeks. A doughy mass of the size of two fists could be felt in the left side of the pelvis. Operation February 3d, 1894. Free dark blood and coagula in the abdominal cavity. Removal of sac, iodoform-gauze packing, and drainage. The tube was found enlarged but intact; the coagula must therefore have been in the ovary, and the pregnancy ovario-tubal. The diagnosis is open to question, but the pathologist reported finding embryonic tissue in the wall of the sac. Recovery.

Case V.—The fifth case, married woman, 27 years, one child two years before. Last menstruation November 30th; bleeding since January 10th. Elastic, fluctuating, pulsating tumor, size of large fist, to left of uterus. Diagnosis, tubal pregnancy. Operation on the next day, February 15th. Sac of irregular outline; walls very thin, ruptured on removal. Posterior layer of broad ligament split while detaching adhesions. Iodoformgauze packing. No fetus found, but diagnosis confirmed by careful examination of specimen.

Case VI.—This was, without the shadow of a doubt, the most desperate and unpromising and, in view of the patient's recovery, the most marvellous case of the series.

Patient, multipara, 29 years of age, had twice skipped a menstrual period, the last by one week, when she was seized with an excruciating abdominal pain and went into collapse, which lasted for over twelve hours. Having gradually rallied, fever soon set in, then chills followed by fever. After four weeks of this course, during which time no definite diagnosis seems to have been made, the abdomen became much distended and was very painful. Finally the patient was brought into Mount Sinai Hospital, and, under a mistaken diagnosis, sent into the medical service. There she was thought to have ascites from Bright's disease, probably acute, as shown by examination of the urine, and only after a week's stay was it thought advisable to insert an aspirator needle, which was done in the right ilio-hepatic region and putrid, bloody fluid withdrawn. An inkling of the true state of the case was then obtained, and I was asked to see the case. This was on February 23d, 1894, five weeks after the severe pain and collapse alluded to. Within forty-five minutes after seeing the patient I opened the abdomen in the median line as usual. Fortunately I had percussed in the linea alba, and, finding resonant sound, had proceeded very carefully. Indeed, for the first time in many years I used a grooved director in

cutting through the peritoneum, and thus escaped injuring the intestine, which was closely adherent at the median line. Immediately on opening the peritoneal cavity a gush of intensely fetid bloody fluid poured out, to such an extent as to induce one of the visiting surgeons, who chanced to be present, to exclaim: "What is this? Have you opened an aneurism of the abdominal aorta?" I found the intestines everywhere glued together, the pelvic roof likewise one mass of adhesions, neither uterus nor appendages discernible. Suddenly my fingers slipped into a slit which ran antero-posteriorly across the pelvic roof, and which I speedily recognized to be the ruptured left tube. On peeling it loose from its adhesions I exposed the body of the uterus, attached by fresh adhesions in Douglas' pouch. Having detached the uterus, I proceeded to ligate what there was of a pedicle of



Fig. 3.-Munde's abdomino-vaginal forceps for through drainage.

the left tube, and removed the dilapidated sac. The abdominal cavity was freely flushed with warm Thiersch's solution until it was fairly cleansed, Douglas' pouch was packed with iodoform gauze, and the wound closed except the lower angle through which the gauze was brought out. The operation was hurried as much as possible, since the condition of the patient called for numerous hypodermics of whiskey before she could be removed to bed. Indeed, I am told that during the next twelve hours after the operation one hundred and twenty hypodermics of whiskey, and camphor and ether, were given her, which in due time caused several deep sloughs on the thighs, from which the patient suffered for a longer time than from the operation itself.

It was scarcely expected that the patient would live through the night, but she did; her temperature and pulse, which were 103° and 130 respectively before the operation, went down nearly to normal, and she did well until the fourth day, when a slight rise of temperature induced me to remove the gauze, which was followed by a profuse discharge of ichorous pus from the abdominal wound. As gauze drainage seemed insufficient, I punctured through into the vagina with the instrument shown in Fig. 3, which I have had made for this purpose. A perforated rubber drainage tube was attached to the sharp end protruding from the vulva, and drawn through the abdominal wound. After a few days this form of drainage also appeared inactive, and the tube was withdrawn and the deep pelvic wound irrigated frequently through a drainage tube inserted from the abdominal surface only. Gradually the pocket closed, and is now (two months after the operation) almost healed. The patient is practically well.

I cannot imagine a greater surgical triumph (and, I may say, a more unexpected one) than the recovery of this patient. Surely, after such cases, no patient who is still alive can despair of recovery in cases of this character, if promptly and thoroughly treated on now well-recognized surgical principles!

It will be remarked that in the first two cases the diagnosis of unruptured tubal pregnancy was made, with almost absolute certainty. In the first case, it is true, an unexpected previous rupture, with solid coagula within the sac, was found at the operation. In the second case the diagnosis was absolutely correct.

In the other four cases the probable diagnosis of ruptured tubal pregnancy was made, and verified by the operation. In no case was the fetus found. Curious to say, in five cases the left tube was involved; in one case only, the right. In the last four cases the specimens were unavoidably so mutilated during their removal, owing to numerous adhesions, that it was impossible to restore them for illustration.

I have, to my knowledge, seen but six other undoubted cases of ectopic pregnancy: one in 1884, at two months, in the right tube; galvanism; arrest of pregnancy; deep shock; recovery; patient still alive and well—the second two years ago; rupture; diagnosis made without question; immediate operation advised, but removal to hospital recommended; operation by another surgeon at home; recovery. In the last case a pressure of other engagements and the bad hygienic condition of the patient's surroundings induced me to advise her removal to a hospital; one other surgeon gave the same advice; a third, however,

¹ Medical Record, September 27th, 1884.

operated the next morning, with good result in spite of the hygiene. I have been led by recent experiences to reconsider my former views as regards the treatment of recognized or suspected unruptured tubal pregnancy, and think now that I would always prefer to remove the tube with its contents by celiotomy rather than arrest the pregnancy by electricity. In rupture of the ectopic sac, celiotomy and arrest of the hemorrhage by removal of the sac is, of course, indicated, provided Nature herself has not checked the bleeding. In this latter ease the necessity for surgical interference must be decided by the peculiar conditions of each individual case.

In the third case I made the diagnosis of probable rupture of tubal pregnancy, but, the patient being in good condition and very tympanitic, I directed measures for removal of the tympanites before operating. This was a mistake, for a secondary hemorrhage took place two days later, during the night, and the patient died before I could reach her. The autopsy verified the diagnosis.

A fourth case was seen by me in Vienna in the spring of 1872, where the gravid tube had ruptured in the second month; the fetus had developed to term in the peritoneal cavity, the placenta remaining in the tube; and the child was removed asphyxiated and was not resuscitated, immediately after the death of the mother from chronic peritonitis.

The eleventh case which I can recall having seen was at a post-mortem in Würzburg in 1868, also an abdominal pregnancy at term, unrecognized, until too late for operation, by my chief, Prof. von Scanzoni.

The twelfth case, and the last, I believe (although not in chronological order), was seen by me in consultation with Dr. Francis Huber about three years ago. The patient was evidently pregnant near term; she had severe pains, high temperature, and signs of pelvic peritonitis. Child could be felt alive. Diagnosis of pelvic peritonitis; prognosis doubtful. Labor pains soon came on, gradually subsided, as also fever; eventual recovery. About six months later the patient came to my office and I found undoubted evidence of an intra-abdominal fetus; mass hard; fetus, of course, dead; uterus empty. Perfect health; therefore advised waiting for septic symptoms or some other cause for operative interference. Not heard from

¹ Carl Braun's clinic, Bandl operator.

since. This was probably also a tubal gestation changed to an abdominal one shortly before I first saw the case.

2. Double True Pyosalpinx (Fig. 4).—I present this case only because it is an instance of what I consider should be called pyosalpinx—that is, tubes distended with pus so as to form an appreciable tumor of oblong shape. The presence of a small

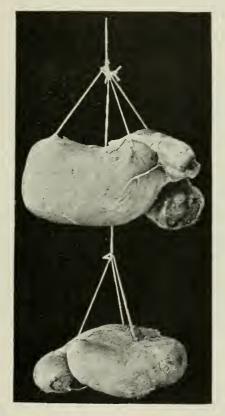


Fig. 4.-Double psosalpinx

amount of pus or muco-pus in an inflamed and hypertrophied tube does not, in my opinion, constitute a true pyosalpinx. True pyosalpinx I have found to be not so very common. Pus tubes—that is, tubes containing pus or muco-pus in so small a quantity as not to distend the tube, and apparent only after the tube is opened after its removal—are merely purulent salpingitis, not true pyosalpinx. I think this distinction should be made, since

the majority of cases of inflamed, hypertrophied, occluded, and adherent tubes are of the latter variety and do not represent tubes which are liable to rupture and cause fatal peritonitis. Such inflamed and hypertrophied tubes are therefore not necessarily dangerous to life and do not call for speedy or immediate removal. A tube distended by pus is always dangerous to life from its tendency to internal rupture, and indicates either removal by abdominal section, or, if adherent to Douglas' pouch and pointing at the vaginal roof, incision and drainage through that channel. When both tubes are distended by pus, whether

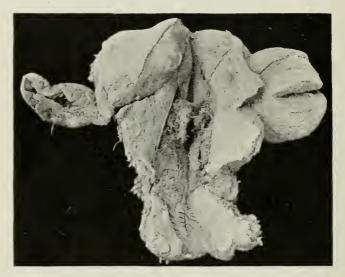


Fig 5.—Epithelioma of endometrium, with fibroids.

loose or adherent, their removal by abdominal section is unquestionably the best and safest method.

Both the tubes here shown were as large as small sausages and completely adherent. There was no drainage employed, and recovery was uneventful.

3. Uterus with Epithelioma of Endometrium and Fibroids.—Patient married, childless; aged 43; very much emaciated. Since six months offensive vaginal discharge. Uterus much enlarged. Blunt curette removed numerous particles which, when examined by Dr. Heitzmann, were pronounced to be epithelioma. Vaginal hysterectomy was advised, and performed November 1st, 1892, at my private hospital. Operation very difficult

owing to narrowness of vagina, requiring splitting of perineum to anus. Uneventful recovery. After six months, recurrence in cicatrix, and death exactly one year after operation.

The occurrence of fibroids with malignant disease of the uterus is not by any means as rare as was formerly supposed. I have several times seen cancer of the cervix together with fibroids of the body. But the occurrence of fibroids and malignant disease in the body of the uterus is rather more rare, although there is no logical reason why a fibroid should not develop in the outer tissues of the uterus and a malignant degeneration of the deeper structures occur subsequently.

In this case the disease appeared to be limited to the uterine mucosa; but it evidently must have been more deeply seated, since it reappeared in the cicatrix. The ultimate result has very much shaken my confidence in the radical cure of carcinoma uteri by vaginal hysterectomy. No more favorable case for a permanent cure could be imagined, so far as previous examination could determine.

4. Uterus with Appendages removed entire by Celiotomy for Sarcoma of the Body.—Patient 42 years, single. Began to bleed profusely at menstrual periods several months before seen. On bimanual examination at my office the uterus was found enlarged and diagnosis made of intra-uterine vegetations. Curette was not used for diagnosis, for fear of exciting hemorrhage. Thorough curetting was advised, and performed a week later at the patient's residence, when the amount and character of tissue removed aroused suspicion. The microscopic examination, by Drs. Heitzmann and Prudden, showed sarcoma of the round-celled variety and of the most malignant type. The cervix was perfectly healthy. Owing to the virginal character of the vagina, abdominal hysterectomy was decided upon and performed on December 27th, 1893. The broad ligaments were tied off step by step, the patient being in Trendelenburg's position, and the uterus was removed entire. The posterior and anterior flaps of peritoneum were stitched with catgut to the respective surfaces of the vaginal stump, and the ligatures carried down into the vagina, which canal was loosely packed with iodoform gauze. The abdominal wound was closed with silkworm-gut sutures.

There was a peculiar feature in this case which, when I first heard of it, led me to doubt the advisability of removing the uterus.

The lady had since her seventeenth year suffered from a difficulty in deglutition which prevented her from taking food otherwise than in the erect position. There appeared to be a stricture, either spasmodic or organic, of the esophagus, which could be overcome only by a series of muscular, straining efforts, which, with the erect position, would naturally be out of the question after an abdominal section, especially when the pelvic floor was opened. It is a eardinal rule that after a celiotomy the recumbent posture is indispensable until firm union of the wound has

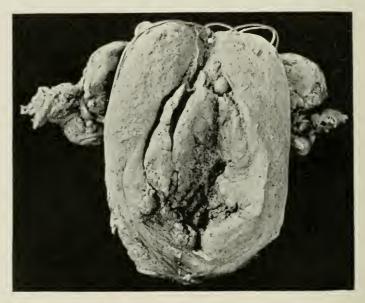


Fig. 6.—Sarcoma of endometrium, with fibroids.

taken place. On my mentioning this fact to the family physician, I was informed that the patient could be nourished through a stomach tube in the recumbent position, and this was indeed done for over a week after the curetting. Relying on this, I offered no further objection to the operation. But after nearly two weeks, when the abdominal wound had apparently healed and the stitches had been removed, I noticed that the patient was not gaining strength and was not looking as well as during the first week. I then learned that there was some trouble at times in getting the tube into the stomach, and that at such times the patient would insist on trying to swallow the food herself and would strain and bear down with her diaphragm. On

examination with the tube it was found that there was quite an accumulation of undigested, decomposed food in what was apparently a dilated pouch of the esophagus. This useless food was siphoned out, and for a time nutrition again went on satisfactorily. But the same difficulty of getting the tube into the stomach again occurred; the tube would curl up in the dilated esophagus. I should state that I had preferred to put the patient in a private room at Mount Sinai Hospital rather than in my private hospital, because I could not in the latter give the patient the constant, unremitting attention which the presence of a large house staff made possible and which her feeding required. The intubation of the stomach was carried out by well-trained assistants, as well as occasionally by the family physician, assisted by another physician who had previously had charge of the case and had made a special study of it. And still, in spite of the thorough acquaintance of these gentlemen with the management of the stomach tube, it was at times found impossible to introduce it, and we were forced to allow the patient to swallow by her own efforts to save her from starvation. As a result of all this straining and sitting-up, what I had all along feared at last occurred. The abdominal wound reopened superficially, and early in the third week the house surgeon told me that on removing the iodoform gauze from the vagina (which had been renewed every few days) he thought he felt a coil of small intestine protruding through the gap, which had seemed to be firmly closed. I found this to be the case and that the coil was adherent. In time a fecal fistula formed, and little by little the patient's strength decreased in spite of all our efforts to nourish her; and when, near the end of the fifth week after the operation, the temperature began to rise, the end seemed near. Death occurred from inanition, hastened by gangrenous perforation of the prolapsed small intestine, on the thirty-second day. The post-mortem confirmed the diagnosis in regard to the esophageal trouble. There can be no doubt whatever that but for the sitting-up and straining before the vaginal roof had firmly closed, the recovery of the patient from the operation would have been speedy and permanent. The specimen showed that the sarcoma was entirely limited to the uterine tissue. In a future similar complication, which I am scarcely likely to see, I should do a gastrostomy first, and, when ventro-gastric nutrition was properly established, remove the uterus.

I am sorry that I did not close the pelvic roof entirely by buried silk or catgut sutures, and shall certainly do so in any future clean case of complete abdominal hysterectomy. Still, I fear that no suturing would in this case have withstood the persistent straining of the forced deglutition. The case was to me a particularly sad one, as I felt that, from my standpoint, the patient should have recovered.

The specimen shows several small fibromata of the body of the uterus, thus demonstrating again the coexistence of fibroid growths with malignant degeneration. I would say, in conclusion, that before removing the uterus I packed its cavity with



Fig. 7.—Ovarian abscess with inflamed tube. Part of abscess sac destroyed during enucleation.

iodoform gauze and closed the cervical canal tightly by catgut sutures, thus avoiding infection of the wound.

5. Abscess of the Ovary; Perforation of the Large Intestine of several months' standing; Celiotomy; Enucleation of Sac of Abscess; Suture of Ulceration into Bowel; Recovery.—Patient married; 32 years; sterile. History of repeated pelvic inflammations for several years. During summer of 1893 noticed pus in her stools at frequent intervals. Operation in my private hospital on October 5th, 1893. Trendelenburg's position. Removal of firmly adherent right appendages. Left ovarian abscess occupying whole of Douglas' pouch and universally adherent. Descending portion of large intestine adherent to upper surface of abscess sac. On detaching the gut a perforation admitting the little finger was found in the gut, corresponding

to a similar opening in the abscess sac. The gut was drawn outside of the wound and covered, the abscess sac peeled out with the fingers until the whole of Douglas' pouch was exposed in a raw condition, and the bowel was then closed with a double row of Lembert's silk sutures. Douglas' pouch was packed with iodoform gauze. Uneventful recovery. Gauze removed on third day, bowels moved on fourth day. Went home on twenty-fourth day.

I have operated on sixteen cases of abscess of the ovary by celiotomy and enucleation of the sac, losing only one case, from septic peritonitis. In none but the case here reported was there a communication with the bowel. The majority of the cases were drained through the abdominal wound for a few days, in former times with a glass tube, of recent years with iodoform gauze, which I prefer. It is an open question whether drainage with gauze into the vagina and closing of the abdominal incision would not be preferable and less likely to leave a sinus, such as, I regret to say, not infrequently follows the removal of adherent pus sacs from the pelvic cavity when abdominal drainage is used.

I have doubtless opened and drained many an ovarian abscess through the vagina when it happened to point there, and eventually cured the case. But I cannot be so sure of my diagnosis in those cases, since the pus sac was so embedded in exudate and adhesions as to render the round, distinctive outline of an ovarian abscess indistinguishable.

20 WEST 45TH STREET.

THE ADVANTAGE OF ATMOSPHERIC DISTENTION OF THE RECTUM, WITH DISLODGMENT OF THE SMALL INTESTINES, IN THE BIMANUAL EXAMINATION OF UTERUS, OVARIES, AND TUBES.

 ${\bf BY}$

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(With three illustrations.)

I HAVE on several previous occasions drawn attention to important modifications of the ordinary bimanual examination—such as a deep invagination of the pelvic floor in making the

pelvic organs more accessible—the bimanual examination by abdomen and rectum, assisted by simultaneous traction upon the cervix with corrugated tenaculum or tenaculum forceps, called for this reason "trimanual examination," thus producing an artificial retroposition and descensus uteri, as well as the possibility of throwing the fundus into an artificial sharp retroflexion and examining the anterior face of the uterus by means of the finger in the rectum.

In spite, however, of these unusual facilities for investigation, cases present themselves from time to time in which the broad-ligament structures can only be detected and outlined with considerable difficulty, and only after a patient persistence in seeking them out. Not that the finger can find nothing in the pelvis; on the contrary, it is embarrassed by finding too much, for the touch is constantly impeded in the course of the examination by the viscera which crowd down into the pelvis from above, forming a sort of pelvic enterocele. Some impairment of the tactile sense is also experienced from the constant contact of the finger with the rectal mucous folds.

Coils of small intestines in the pelvis containing fluid often feel tense and fluctuating, and thus readily impose themselves upon the examiner as large cystic ovaries, or leave him in doubt as to their true nature.

The complete removal of these impediments may be satisfactorily effected in the following manner: The patient is placed in the knee-breast posture, with shoulders on the table and hips high and thighs vertical. The anal orifice is opened by a small speculum or tube, allowing the air to rush into the rectum. The explanation of this phenomenon is that, upon assuming the knee-breast posture, the small intestines gravitate along the anterior abdominal wall into the upper abdomen toward the diaphragm, creating a suction at the most elevated portion, which is the pelvic extremity, by means of which the whole ampulla and rectum balloon out with air as soon as the anus is opened, and the distended rectum applies itself broadly over the posterior surface of the uterus and left broad ligament.

Before making such an examination both rectum and bladder should be thoroughly evacuated. The pelvis being thus

¹ AMERICAN JOURNAL OF OBSTETRICS, February, 1891.

² New York Medical Journal, November 25th, 1893, and Annals of Gynecology and Pediatry, January, 1894.

elevated, as soon as the atmospheric dilatation is effected the tube is removed, the anus closes, and the patient is placed in the dorsal position with thighs flexed upon the abdomen, and the bimanual examination is at once made per rectum and abdomen.

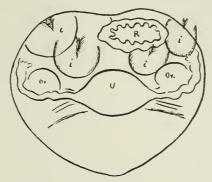


Fig. 1 shows the relations of the collapsed rectum (R) to uterus (U) and ovaries (Ov), the small intestines (i,i) filling the pelvis.

The index finger coated with vaselin, introduced within the anus, experiences at once the remarkable sensation of entering

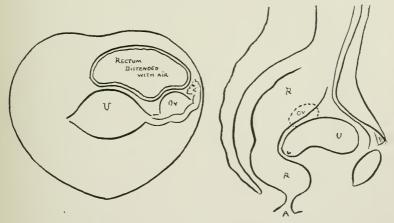


Fig. 2. Fig. 3.

 ${\bf Fig.~2}$ shows the relations of the bowel distended with air to uterus and ovary after the small intestines have been displaced.

Fig. 3 shows the facility with which the digital examination can be made through the rectum thus distended and applying itself widely to the posterior surface of the uterus and broad ligament.

a large cavity filled with air, in which the customary resistance is absent. The communication with the upper bowel between the utero-sacral folds is, under these circumstances, readily found,

and the finger is conducted behind the broad ligament, when, on using the outside hand in assistance, uterus, broad ligaments, ovaries, and tubes are at once palpated directly through the rectal wall, without resistance and with startling distinctness.

The true pelvic viscera thus seem, as it were, to be skele-tonized in the pelvis, lying so clearly exposed to touch that the minuter surface peculiarities, fissures and elevations, and changes in consistence, can be detected, and a diagnosis made more satisfactorily, more rapidly, and with far less effort than under ordinary conditions.

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THE ANTISEPTIC TREATMENT OF ENDOMETRITIS.1

BY

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I wish to discuss the principles underlying the rational treatment of endometritis, and the methods that conform to these principles and that also stand the test of clinical observation. Our fragmentary knowledge concerning the structure, functions, and pathological conditions of the endometrium has heretofore furnished slight aid in suggesting methods of treatment. During the last ten years, however, sufficient progress has been made in determining the pathogenesis of endometritis to justify the hope that the establishment of sound principles may bring some degree of uniformity in our present diverse and antagonistic teachings.

Without necessarily admitting the broad statement that all inflammatory processes are due to microbes, as taught by Senn, Roy, and other recent surgical writers, it may be claimed that this position is strengthened by the investigations made to determine the pathogenesis of endometritis. It is well established that in the healthy uterine eavity there are no microbes. Winter has proven this by the examination of large numbers of uteri removed from the body. Döderlein, Ott, and Czer-

¹ Thesis. Chicago Gynecological Society, February 16th, 1894.

² See references at the end of the paper.

niewski have found the lochia in non-febrile puerperal cases free from microbes. Strauss and Sanchez-Toledo have also found the nteri of lower animals free from bacteria. Why the uterine cavity remains free from germs, when, as has been shown by Winter's and many others, in all or nearly all women the vagina and cervical canal contain large numbers of microbes, has not been determined. The suggestion of Winter 3 that the absence of a uterine secretion prevents the formation of a suitable soil, such as is found in the cervix and vagina, may have some bearing on the question. It is also important to remember that the microbes found in the vagina and cervix have usually lost most of their virulence. This is true of both the staphylococcus and streptococcus. The unbroken epithelial membrane of the endometrium is probably in no danger from them after they have undergone the changes produced by a residence in the vaginal and cervical canals; and the menstrual decidua, instead of forming a favorable nidus, is also toxic to them. Quite different, however, are the effects of inoculation with bacteria from without.

Puerperal inflammation of the uterus was the first variety found to be due to bacteria. Pasteur, in 1880, demonstrated the presence of streptococci in the uterus as well as in the other organs of women who had died of puerperal fever. Since then many others have found streptococci not only in autopsies, but also in the interior of the uterus of women suffering from puerperal infection. Döderlein ' and others have found the staphylo. coccus in similar cases. Krönig has found the gonococcus in the uterus in nine cases of mild puerperal fever. Von Franqué ¹⁰ has reported a fatal case of fever due to infection by the bacillus coli communis. All cases of endometritis post partum or post abortum are probably of microbic origin. Endometritis originating in other conditions, as from the introduction of sounds and tents, gonorrheal vaginitis, etc., is probably due to the same cause. Bacteriological investigation during the last few years tends to confirm this. Some of Winter's acases might be mentioned in this connection. I will also call attention to the recent report of Brandt," working in Slavjansky's clinic, who examined twenty-five cases of chronic endometritis and found bacteria in twenty-two; streptococci were present in two cases, staphylococci in seven, gonococci in three, and non-pathogenic bacteria in the other ten.

Positive information as to the tissues inhabited by the bacteria, their mode of growth, and the way in which they produce their pathological effects in chronic endometritis, has not yet been obtained. In women who have died from puerperal fever the connective-tissue or lymph spaces of the endometrium, as well as the lymph channels of the muscularis, are crowded with colonies of streptococci. It is probable that the connective-tissue spaces of the stroma are the chief habitat of the germs in all cases; their presence in the epithelial cells, on the surface of the mucous membrane, and in the glands is not to be doubted. It is probable that the epithelial layer, although it consists of only a single row of cells, is a protection to the underlying stroma.

Allow me to remind you of the peculiar changes that take place in the formation of the menstrual decidua, by which this layer of epithelium is removed every month, which furnish a possible explanation of the ease of infection of the endometrium when once active bacteria have passed through the internal os, and of the greater readiness with which infection occurs at the menstrual epoch. The essential features of menstruation—the exudation and hemorrhage into the outer fourth of the membrane, the casting-off of the epithelium and loosened stroma cells, and the regeneration from the epithelium of the glands 12—have also an important bearing upon the reasonableness of curettage and cauterization.

Having considered the two most important facts bearing upon rational treatment (namely, etiology, and the changes in the endometrium incident to menstruation), we now proceed to the first and perhaps the most important division of the subject—prophylaxis. Winter, Döderlein, Steffeck, Burguburu, Harkhardt, and others have shown that the cervical and vaginal canals nearly always contain one or more species of bacteria; that in from forty to forty-five per cent of all cases there were present pathogenic bacteria, including streptococci, staphylococci, etc.; in the rest of the cases only the long non-pathogenic Döderlein'schen bacillus, which produces the normal, strongly acid vaginal secretion, was found. Although there seems to be considerable difference of opinion concerning the toxic properties of the pathogenic bacteria when introduced into animals, many observers finding that their virulence is diminished by residence in the genital tract, yet all admit that this virulence may be regained upon change of habitat. While these patho-

genic bacteria might not grow when brought in contact with the undenuded endometrium, yet we should not be justified in knowingly introducing them into the uterine cavity. When one considers the great difficulty of disinfecting the hands, as so forcibly shown by Kelly, he can imagine the uncertainty of rendering the surface of the less accessible membrane of the vagina and cervix aseptic. This has also been demonstrated by bacteriological investigations. On account of the importance of the subject, the almost universal carelessness shown by general practitioners, and the silence of most teachers, I will give, somewhat in detail, the rules to be observed in the introduction of the sound, curette, or any other instrument into the uterus:

- 1. Do not expect to complete the preparation of the patient with less than fifteen minutes of hard work.
- 2. Never make the examination at the first visit of the patient. Instruct her how to take a vaginal douche, and direct her to use sublimate douches twice a day for three or four days. If immediate examination is required, let it be done at her home or in a hospital with all the preparatory details of a surgical operation.
- 3. Thoroughly disinfect the external genitals and surrounding skin.
- 4. Disinfect the hands and instruments, including the irrigating tip, which should be a glass tube.
- 5. Wash the vagina with a solution of lysol or creolin. In the office I have found Too'ker's bedpan most useful. A liquid soap, like Lee's or Johnstone's, is quite necessary. With two fingers, either with or without sterilized gauze or cotton, thoroughly scrub every part of the vaginal wall.
- 6. Introduce a Neugebauer speculum, which is better than any form of Cusco's bivalve, for it is asepticizable; and better than a cylindrical speculum, for it is much easier to work through.
- 7. Disinfect the cervical canal by means of a cotton swab, using first the liquid soap, then a strong creolin solution, and finally alcohol. Never introduce an instrument without seeing the cervical canal.

I believe that the carrying out of these rules will prevent all except post-partum, post-abortum, and gonorrheal endometritis and salpingitis.

In considering the prevention of infection of the uterus during labor, we must admit the possibility of the emigration of pathogenic bacteria from the vagina in the forty per cent or more of cases in which they are found; yet practically we accept the conclusion of Williams, 16 Veit, 17 and many others that the obstetrician will do well to act as if auto-infection did not exist. In hospitals, or in cases where the practitioner can be within instant call of the patient, no vaginal examination should be made. In most cases in private practice, however, where it is necessary to determine the amount and rate of progress of the cervical dilatation, one or more vaginal examinations are required. Here, as in cases of operative interference, the most rigid subjective disinfection is demanded. The character of the vaginal secretion should determine the use of the vaginal douche. If it is of the normal reaction, as determined by the litmus paper, no pathological bacteria are present and no douche is required. If the reaction is slightly acid, neutral, or alkaline the sublimate douche should be used.

In abortion hemorrhage frequently occurs before complete dilatation of the cervix. The vagina and cervical canal should then be disinfected as described above and tamponed with sterilized cotton or gauze. In twenty-four hours, unless the cessation of pains indicates the earlier emptying of the uterus, the tampon is removed, and, if the cervix is not dilated, it is reapplied. In this way we avoid the danger of infection of the uterine cavity. If infection has already occurred it becomes necessary to empty the uterus by instruments. In this event the antiseptic precautions governing all operations must be employed.

The prevention of the extension of an acute gonorrheal inflammation from the vagina to the endometrium is an important and serious problem. The tenderness generally prevents the thorough use of a vaginal douche. In children we must keep in mind the possibility of the irrigating tube being so firmly grasped by the vaginal sphincter that the fluid and secretion may be carried into the uterns. This can be prevented by providing a return flow. In addition to the use of the douche, every four to six hours a suppository of iodoform or bismuth subgallate can be used with advantage.

The management of the cases of unhealthy vascular conditions of the endometrium resulting from displacements of the uterus, pressure of tumors, disease of the rectum or bladder, etc., which lead to diminished resistance to the attacks of the

immigrating bacteria, must be dismissed with the suggestion that these predisposing conditions are not to be overlooked, but corrected so far as possible.

Passing now to the second division of the subject, namely, the treatment of endometritis, I will classify the methods for meet-

ing the indications, as follows:

1. Removal of débris, of gravidital or menstrual decidua, which furnishes soil for the development of bacteria, together with toxic products and secretions, by irrigation, drainage, swabbing, or curetting.

- 2. Destruction of the pathogenic agents by direct application of antiseptics. This includes the use of caustics of greater or less strength, applied in solution by the syringe or on an applicator, or in solid form. A valuable preliminary to these methods is the removal of the outer portion of the endometrium by the curette.
- 3. Stimulation of the resisting and bacteriocidal properties of the tissues. The former are increased by massage, such as is given by Doléris' écouvillon or by the ordinary applicator swab. The antiseptic properties of Nature are stimulated by measures which improve the circulation, control the distended capillaries and arteries, empty the lymph channels, and remove the exudations and extravasations of serum and blood. Whether this antiseptic power of Nature is due to phagocytosis or to the bacteriocidal influence of blood serum, or to some other cause, it is one of the most important factors in treatment. These effects are produced by the application of slight stimulants, like iodine, etc., and by massage and electricity.

Without attempting to describe in detail each of the procedures here suggested, I will try to show briefly their rational use.

Methods for cleansing diseased cavities are based on common sense and sound surgical principles. There is no question as to the use of the curette to remove placental débris, however much objection may be made to its use in removing the surface layer of the endometrium. Removing abnormal secretion is of value, but chiefly as a preliminary to more thorough procedures. Where this cleansing can be done with a swab of cotton on an applicator or syringe tube, it is probably the safest way. I frequently use liquid soap followed by water, but irrigation with a soda solution by means of a double-current catheter will reach

portions of the membrane not touched by the swab. Much has been said of the danger of irrigation, but no serious result has ever occurred when there was an unobstructed tube for a return flow. The colie that so often follows its use is generally due to detached or coagulated plaques in the uterine cavity. The écouvillon of Doléris is no doubt useful in the same way by removing adherent mucus and irritants. This instrument also stimulates the antiseptic properties of Nature, on the principle of massage. In this connection I will call your attention to a new instrument which acts on the same principle as the écouvillon, but is much more efficient both for cleansing the endometrium and for massage. It was made for me by my friend Dr. Fenton B. Turck, of this city, and consists of a revolving swab or broom attached to a dental cable, and was designed by him for use in cleansing and massaging the mucous membrane of the stomach. As he has not yet published a description of his method, and as I have had but little experience with the instrument, I will only say that it promises to be of value in meeting this indication.

Another valuable adjunct to the other methods of treating endometritis is drainage. In a few cases the internal os is suffi-ciently open to allow satisfactory drainage. In other cases the coagulated mucus produced by astringents and caustics, together with placental and menstrual débris, etc., remains in the uterine cavity. Gauze is a very poor drain; the cross-fibres obstruct the capillary stream and hold back almost completely all solid matter. Gersuny¹⁸ and Chrobak¹⁹ long ago demonstrated the great superiority of wicking. Chrobak, in testing the relative eapillary action of each, half-emptied one beaker into another in twenty-four hours by a bundle of wicking thirty centimetres long; while in the same time a bundle of strips of gauze had transferred no fluid, and only one strip which had been dipped into iodoform-collodion was entirely saturated. We should also remember that the drain may furnish a ladder for the baeteria to enter the uterus, hence the vaginal end should be as well protected from the outside as possible by cotton tampons. While the value of drainage is unquestionable, I believe that many cases have been made worse by its use. This is because the plug of gauze acted as a dam instead of a drain, and because no attention was paid to the reverse current from the vagina.

Our success in the use of antiseptics depends on our ability to

bring the agent into direct contact with the pathogenic germs. Lusk makes a statement to the effect that it is as reasonable, in a case of erysipelas, to sponge off the surface of the skin with the hope of destroying the streptococci deep underneath in the lymph spaces, as to cure endometritis by washing the surface of the endometrium. Fortunately we have in the endometrium a condition quite different from that which exists in the skin. The outer, protecting layer of the endometrium is normally removed every month and reproduced in from five to ten days. We can also remove it with the curette or with caustics, knowing that it will be regenerated. Thus we may penetrate to the seat of the disease and apply our antiseptics direct to the germs.

Brandt" believes that the different forms of endometritis are caused by different bacteria located in different habitats. In catarrhal endometritis, endometritis interstitialis, he finds short, thick bacilli in the hemorrhagic extravasations. In septic endometritis, endometritis decidualis acuta, the dilated glands are filled with cocci. In gonorrheal endometritis, endometritis glandularis, the gonococci are in the epithelial cells. He also finds karyokinetic changes in the stroma and the epithelial cells respectively. If these observations are confirmed they may lead to more precise indications for the different methods of treatment than we at present possess. In the meantime, however, we may affirm that the direct application of antiseptics is based on sound principles, although they may hereafter be modified in detail.

The curette is only a part of the treatment, for no one claims that by it alone we can render the uterine cavity aseptic. It is simply an auxiliary to prepare for the antiseptic agent. In this respect it differs from the strong caustic, which has both a denuding and a germicidal action. When the curette is used carefully and thoroughly, however, and followed by an efficient germicide, I believe it is a more reasonable surgical procedure than the caustic. The débris produced can be at once removed and the extent of the curettage definitely controlled. The caustic causes a slough which must come away, and during this process there is the persistent danger of fresh infection. This danger is avoided by carefully carrying out the method of Rheinstädter, which is the best method of cauterization. He applies fifty per cent zinc chloride solution at frequent inter-

vals. While the method of Rheinstädter, well excented, produces better results than poor curettage, I think that the practical results of the majority of gynecologists agree with the theoretical considerations in giving preference to the latter method.

The use of caustics according to the method of De Montpellier, while so valuable in his hands and those of others, seems to be open to the same objections as the method of Rheinstädter, and in a greater degree. As I have had no experience with this method, and as other methods are satisfactory and theoretically safer, I will omit further mention of it.

Mild astringents or stimulants, like weak zine chloride or iodine solution, are often harmful, because they serve as carriers of contagion; but when they are used with antiseptic precautions they may in suitable cases be of considerable benefit. I regard their action as not solely nor chiefly antiseptic, but believe that they also modify the blood and lymph circulation and thus stimulate the antiseptic properties of Nature. All the agents mentioned—irrigating fluids, drainage wicking, the curette, etc.—also act in a similar manner; but this is especially true of massage by the swab or éconvillon. By massage I do not mean the method of Thure Brandt, but I refer to the stimulation of the cellular elements of the endometrium by mechanical irritation. I understand that Fränkel relies on this influence in his treatment of ozena, by the vibratory undulations which he imparts to the nasal mucous membrane by means of an applicator. A similar vibratory movement can be made in the uterus with a swab introduced through a short cervical speculum. I believe, however, that the same result can be obtained by the broom of Doléris, or, better, by the instrument of Turck. Whether the influence is exerted on the epithelial, glandular, and connective-tissue cells direct or through the medium of the blood vessels I do not know. If the Metschnikoff theory be the correct explanation of the antiseptic properties of Nature, one might assume that stimulation of phagocytosis was the essence of the process.

Electricity is another agent which must be considered an auxiliary of Nature in the treatment of endometritis. A current of sufficient strength to have direct germicidal properties is too strong to be used in the uterine cavity. I do not believe it to be advisable to use a current strong enough to produce a

cauterizing effect. The galvanic current is a valuable agent in controlling hemorrhage, in cases of hemorrhagic endometritis, by virtue of its well-known effect on the circulation. The anode should be applied to the endometrium. Whatever effect the galvanic or the faradic current may have on the cellular elements cannot at present be considered.

Different methods of treatment applicable to special varieties of endometritis are as follows:

In post-partum or post-abortum endometritis the decidual débris and toxic secretions should be removed by the curette, irrigation, and, if necessary, drainage. Following the curette a strong antiseptic solution should be applied to the endometrium with a Braun syringe or an applicator.

In acute endometritis following acute vaginitis, generally of gonorrheal origin, the most prompt and thorough measures are necessary to prevent extension of the disease to the peritoneum and Fallopian tubes. Until the inflammation reaches the tube the problem of aborting gonorrhea is simpler in the female than in the male, on account of the greater accessibility of the tissues affected. I agree with Polk in advocating dilatation, antiseptic irrigation, and drainage. The disinfection should be thorough, and can be carried out properly only under anesthesia. At a later stage, when the tubes are unquestionably involved or an exudative peritonitis is established, the expectant treatment must be employed.

In mild cases of endometritis two or three months after an abortion, in which the menstrual flow is considerably increased and where there is the beginning uterine syndroma described by Pozzi 20 -- namely, pain, leucorrhea, symptoms from distant and neighboring organs-we seem to have only slight and easily removable infection. This variety of endometritis includes the majority of cases that are suitable for office treatment. After the thorough preparation for invasion of the uterus above described, the endometrium should be cleansed by irrigation or swabbing, and the uterine cavity thoroughly swabbed with iodized phenol. In making the last application Wylie's cervical speculum or protector is often of value. This class of cases furnishes one of the best indications for the use of electricity.

When such cases have progressed for several months or years deep-seated infection of the uterus exists, which is often obstinate and intractable. If curettage and antiseptics are not sufficient the after-use of the éconvillon or revolving swab will be a valuable auxiliary.

I have attempted to prove that endometritis is a disease of microbic origin and that its treatment should be based on antiseptic principles. I cannot agree with those who hold that there is only one method of treatment for endometritis. Those who say that the curette is the only method of cure are as far from the truth as those who believe that some one caustic is an infallible remedy. There is good in all methods that meet the chief indication, which is to remove the cause of the disease.

In my hasty review of the methods of treatment I am aware that there is much chance for misunderstanding and criticism. The attempt, however, to inquire how far methods are based on definite principles seems to me worthy of commendation.

350 WEBSTER AVENUE.

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A CONTRIBUTION TO THE TECHNIQUE OF SUPRAPUBIC HYSTERECTOMY.¹

BY

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(With three illustrations.)

THE great problem in suprapubic hysterectomy has been what to do with the pedicle. In the method of suprapubic hysterectomy which I have been working to perfect, we seek to have no pedicle at all. Then comes the question, What will we do with the uterine arteries and the ligatures which secure them? Leave them long enough to drain into the vagina, or cut them short?

For the last four years I have been trying to reduce the number of ligatures to the minimum. I here present a specimen which, with the exception of the ligatures used in tying off ovaries and tubes, was removed without any ligature at all; the uterine arteries, being left with the woman, were neither tied nor cut, and cannot be seen on the tumor. Some four years age I had an instrument made to be used in separating the capsule from the tumor. A lady had come to me with a large, nodular fibroid tumor so embedded in the pelvis that Dr. Chambers had decided it would not be best to remove it. The tumor became larger and larger. The doctor was out of the city, so she consulted me, and I determined to remove it. I had a tinker make me the instrument shown in Fig. 1. From what knowledge I had of the anatomy of the uterns I believed I could enucleate the mass with slight hemorrhage with this instrument. The result was not satisfactory, so far as the peeling-out of the nodules and cervix was concerned, due to lack of "backbone" in the instrument, though the patient made a satisfactory recovery. I nearly always ligate the broad ligament so as to tie off the ovaries and tubes, sometimes leaving a piece of cervix, cutting behind it on my staff for vaginal drainage, again taking out the entire cervix, and using very few ligatures.

¹ Case reported to Marion County Medical Society, March 13th, 1894.

Recently I have devised an instrument (Fig. 2) which has enabled me to perfect my method of dispensing with ligatures, except those which tie off the ovaries, Fallopian tubes, and the upper part of the broad ligaments.

The abdomen being opened and the broad ligaments tied off



Fig. 1.

so as to secure the ovarian arteries, with button-pointed scissors I girdle the tumor below the place where the elastic ligature would usually be placed. I begin with these seissors and cut

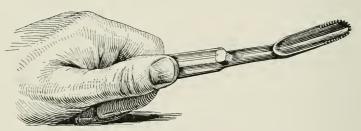


Fig. 2.

around the line mentioned, drawing up the capsule anterior and posterior. I then peel down the capsule of tumor and cervix with this gouge (Fig. 2), as a glove finger would be pushed down and off with a spatula. I then pass my hysterectomy staff up the vagina, cut into its groove, and draw a strip of bismuth subgallate (dermatol) gauze through the fenestra of the staff.

Withdrawing the staff, the gauze is drawn down into the vagina. Then packing the pocket with the upper end of the gauze, folding the flaps of the capsule and uniting them with silkworm gut so as to secure sero-serous approximation with drainage from the vagina, I close the abdominal wound, only keeping in a small Eastman drainage tube.

In this case I found one bleeding point, upon which I used a ligature, but only one small ligature, and I presume packing would have controlled the hemorrhage. In the specimen (Fig. 3) no one can find anything to show that there has been a



Fig. 3.

severing of any blood vessel on either side, except the ovarian arteries. In other words, the uterine arteries are in the pelvis of the woman and not in the specimen. Though I have been working for several years in the direction of reducing the number of ligatures to the minimum, the operation has been delayed to a great extent for the want of a proper patient and a suitable tumor on which to operate. I have found nodular masses here and there in case after case, which induced me to go in some beaten and well-tried path, using ligatures enough to make it safe.

197 No. DELAWARE STREET.

ABSCESS FORMATION IN THE PATENT URACHUS.1

BY

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The urachus is a cord-like, chiefly fibrous structure, of an embryonal vestigiary character, extending from the bladder to the umbilious, lying between the peritoneum and the abdominal muscles, and acting as a suspensory ligament to the bladder.

The uncommon but not extremely rare lesions of this structure are only to be comprehended when its embryological and pathological relations are clearly understood.

Embryological.—The urachus, the bladder, the female urethra, and that part of the male urethra which is not produced from those epiblastic folds which give rise to the penis, are formed from the allantois. It will be recalled that the allantois is that one of the fetal membranes which carries with it to the placenta the fetal blood vessels, and therefore supplies the embryo with oxygen and nutriment. In the human subject no embryos have been described at a time suitable for the study of the allantois in its very early stages of development (Schaefer²³).

Early in the second month of embryonic life a bud of hypoblastic tissue is pushed out from the tail end of the hind gut and carries before it a rather thick mass of mesoblastic tissue into the space between the layers of the amnion. The cavity of the alimentary canal opens, therefore, directly into the cavity of this projection, which is called the allantois. As the hypoblastic wall of the hind gut pushes outward it carries with it, as has been said, a portion of mesoblast, which becomes, with the development of the circulatory system, exceedingly vascular. The allantois now reaches and spreads out upon the chorion, thus bringing the fetal vessels in close relationship with the

¹ Read before the Chicago Gynecological Society, February 16th, 1894.

maternal venous sinuses and forming the fetal part of the placental circulation.

It is only that portion of the allantois which is eventually enclosed within the plates of the somatopleure, and which therefore remains permanently a part of the fetus, with which we have to deal. In the second month of fetal life the stalk of the allantois becomes dilated, near its origin in the hind gut, into a spindle-shaped diverticulum. A constriction separates this spindle-shaped tube into two parts, the lower one of which, the urogenital sinus, communicates with the alimentary canal, which at this time has developed into the cloaca. In the metamorphosis of the urogenital sinus and cloaca into the urinary and genital organs, perineum, and rectum we are not directly concerned. The upper sacculation becomes the urinary bladder by the atrophy and further constriction of the allantois. But the histogenesis of the bladder is still unknown (Minot¹⁵); even the exact time when the constriction of the urachus occurs is as yet undetermined.

The umbilical cord contains relics of the allantois at the time of birth in the form of a delicate tube lined with epithelium. Says Minot 14 in his description of the umbilical cord at term: "In this jelly [Wharton's] are found three large blood vessels and usually a few degenerated remnants of the epithelium of the allantois. . . . There is usually to be seen in sections of the cord at term, according to Kölliker, especially in sections from the proximal end and middle region, a small group of epithelial cells with distinct walls, irregularly granular contents, and round nuclei; around the cells there is a slight condensation of the connective tissue, to form, as it were, the envelope. This structure has been regarded by some writers as the persistent yolk stalk—as, for example, by Ahlfeld.' Kölliker" considered it to be the remnant of the allantoic cavity, a supposition which my own observations confirm. . . . The allantoic duct occupies usually a position between the two arteries; it attains its maximum diameter about the fifth week, when it is a small epithelial tube of irregular width, as which it remains for some time without noticeable alteration; during the third month it loses this character and becomes solid by the enlargement of its epithelial cells; the duct persists up to birth in this form, though losing, according to Kölliker, its complete continuity; after it becomes solid there is a slight condensation of tissue around it."

At the time of birth the allantois has atrophied within the abdominal walls to a delicate tube closed near the bladder. In the completely developed human subject this embryonal relic is still called the urachus, or, in acknowledgment of its sole remaining function, the ligamentum vesica medium seu suspensorium.

In the majority of cases Luschka 12 states that "the ligamentum vesicæ medium does not reach the navel, but, about five or six centimetres above the vertex of the bladder, after having become free of its muscular layer and more compact, is lost in a number of tendinous threads which, for the most part, unite with the left and right ligamentum vesicæ laterale, but some of which also meet one another in such a way that a sort of network is produced. . . . In many cases one finds as an immediate continuation of the vesical mucous membrane a tubular prolongation of the vertex, sometimes two millimetres in thickness, whose beginning is indicated not rarely by a fine opening appearing from the bladder, as if produced by a pin. Instead of this, usually only a groove is noted, and very often even this is missed, so that no trace of the communication is visible. In such cases the beginning of the urachus is usually obliterated. Such a destruction of the lumen is usually found through only a short extent. The tube soon begins again to be hollow, and retains this lumen in the adult for a distance of five to seven centimetres, sometimes even higher. The tube as it passes upward grows smaller, possessing a lumen of only one-half or one millimetre."

The lumen is characteristically uneven, and by lateral dilatation gives rise to cysts which may even become independent of the chief part of the tube.

Wutz ³⁷ has made a careful and interesting study of the literature pertaining to the anatomy of the post-natal urachus, going back to the earliest records. His own observations embrace the study of seventy-four bodies, confirming the statements of Luschka for the most part and adding new facts. In these bodies he found the urachus to increase in length with advancing age as follows: in the new-born the length was 3.1 centimetres; between the ages of 17 and 25 years, 16.5 centimetres; between the ages of 25 and 70 years, 18.7 centimetres.

The results of the examinations made by Wutz indicate that the urachus is permeable in most cases from the bladder upward, for a short distance, by a very fine probe. At the entrance of this tube a small fold of mucous membrane lies transversely in a valve-like way, preventing the entrance of urine and rendering probing difficult. The diameter of the muscular layer diminishes toward the upper part of the tube, as does also the epithelium lining it. The beginning of the tendinous character of the ligamentum vesicæ medium occurs in children quite regularly at a point one-half of the distance between the vertex of the bladder and the umbilicus, while in adults this point is located at only one-third of this distance. Nevertheless Wutz finds that there is an extra-uterine growth of the musculature of the tube, as well as a growth of its epithelial lining. The point of insertion of the urachus into the bladder is marked, we learn also from Wutz, by a dimple (Einziehung).

Pathological.—While we admit the normal persistence of the epithelium of the urachus with partial patency of the lower part of the tube, it cannot be conceded that the canal is pervious throughout its entire course, even to fine probes, except in very unusual cases which must be regarded as pathological.

Patency of the urachus is said to be complete, according to the classification of Meckel, when the canal is open from the umbilicus into the bladder, being permeable for the passage of instruments or injected fluids from without, or permitting the escape of urine out of the bladder from below. It is partial when the passage is open from the umbilicus for some distance in the direction of the bladder, but not into it; or when the duct is patent from the bladder upward toward the navel, but not reaching to it.

Closely related etiologically to patency of the urachus are the more serious malformations known as fissura vesica superior and exstrophia vesica. Two theories to account for all these conditions have been advanced. Ultzmann 22 happily quotes from Steiner as follows: "It may occur occasionally that, either as a result of too slight energy in the tissue-forming activity of the fetal organism, or of arrest of development in the formation of the urethra, the closure of the allantois does not take place throughout; or that, at a time when the abdominal walls are still open, by an arrest in the normal development of the urethra the already closed sac of the allantois becomes distended ad maximum and finally bursts."

In the etiology of the graver forms of allantoic maldevelop-

ment we have only an incidental interest, so that it is sufficient to say that the theory of rupture of the allantois has not found as much favor, according to Ultzmann (curiously enough, Orth thinks the theory of allantoic rupture is the more popular), as the simpler notion of failure in the closure of the abdominal walls. I would venture to suggest that the rupture theory becomes extremely complicated, involving an explanation of an explanation, when we apply it to those cases where the urethra, in which the obstruction hypothetically occurs, is wholly normal at birth, although intra-uterine healing of such defects has, according to Orth, been observed.

There seems but little doubt, however, that obstruction to the outflow of urine in post-natal life may be responsible for the dilatation of a persisting duct to a channel of considerable size. In favor of this view Stadfeldt, who has collected fourteen cases, notes the fact that twelve of the patients were boys. He concludes that the tortuous passage of the male urethra favors an intravesical urinary pressure higher than that occurring in the female bladder, thus more strongly tending to force open a delicate tube not quite closed. Bramann² supports the same idea by citing I. I. Charles' interesting case of a boy who had a complete urachal fistula, allowing escape of urine at the umbilicus, as a result of a tight prepuce. The fistula closed spontaneously as soon as the phimosis was relieved.

Although I know of no such case, it is quite conceivable that a partially pervious urachus (patency extending from the navel down to the fold of mucous membrane which is described by Wutz as closing the vesical extremity of the tube) might be rendered complete by the rupture of this bar by abscess formation in the allantoic remains.

Wutz reports cases of suppuration in small cystic dilatations of the urachus as the result of direct extension from the bladder in suppurative cystitis. The degree of distention is small, but sufficient to indicate that, in the case of a long-continued inflammatory process without adequate drainage, the cavity might equal in size the largest cysts.

The frequency with which Wutz found cysts of the urachus in normal bodies is surprising, although the dilatations were so small as to be of purely theoretical interest, some being of microscopic size, the larger ones equalling the volume of a bean. In thirty-six bodies examined Wutz found cysts twenty-four

times, nine of these cadavers being female and fifteen male, there being among the seventy-four cases studied thirty-six females and thirty-eight males. Wutz asserts that he found the frequency of these cysts to increase with the age of the patient. All the cysts observed by Wutz had their seat in the lower fourth or third of the distance between the bladder and umbilicus, occurring of course in the normally persistent part of the urachus. The majority of these small cysts had a stratified epithelial lining; a few had only a single layer of cells. All of them had a well-developed layer of smooth muscle fibres. In the fluid filling these cysts Wutz found some small yellowish bodies, which he decides are not corpora amylacea, as Luschka thought them.

That the cysts of the urachus may be of clinical interest is apparently shown by numerous publications in recent years, chiefly by Mr. Lawson Tait ^{29, 30} and his pupil, Dr. F. B. Robinson, ²¹ although Wutz was not satisfied that certain cases reported upon the Continent were not cases of localized peritonitis with encystment.

It is gratifying to be able to cite the paper of Wutz as a careful and critical review of the literature of these large cysts up to 1883, the date of publication.

The causes of urachal dilatation to the production of cysts have been as little elucidated as the causes of dilatation in other functionless tubes. Inflammation of a chronic character has been frequently cited as a cause for the formation of cystic dilatations. It is worthy of note that in a number of cases suppurative inflammation was present; but Robinson's supposition that the inflammation in the cases which he saw operated upon by Tait was tuberculous, is not supported by any other evidence than gross appearances. In several of Mr. Tait's * cases a urinary fistula remained for a time after drainage of the sac through the abdominal wall, which would lead us to suspect that a communication between the bladder and the sac has led to the distention.

The concretions found by Wutz in the small cysts he observed

* It is much to be regretted that no accurate pathological report in reference to the findings in these cases is available. Mr. Bland Sutton has examined the wall of the cavity in one case, but, while his report seems accurate so far as it goes, it is not sufficiently extensive (doubtless from lack of material) to put beyond cavil the question of urachal dilatation as against localized tubercular peritonitis.

were rare and, of course, minute. These concretions likewise may be of pathological importance when large, especially if an infection has occurred in the mucous membrane of the urachus. They are usually formed within the patent or partly patent duct. Bramann reports the strange case of a 63-year-old woman who gave a history of cholelithiasis eighteen years before, followed by abscess formation and discharge of pus from the umbilicus. A fistula remained until the time of observation, discharging variable quantities of pus. An operation was performed, the swelling being opened and a quantity of thin pus being evacuated. The cavity also contained four pigeon-egg-sized biliary calculi. Recovery followed repeated curettings. The route by which these calculi got into the urachus, if indeed they really occupied that duct, cannot be absolutely determined.

The calculi usually observed in the urachus are of the ordinary varieties, Wutz reporting the probable determination of calcium carbonate in some of the smaller ones which he analyzed.

Suppuration has been in some cases kept up by the presence of these calculi in the dilated duct. Paget ¹⁶ removed a large calculus through the umbilious, although he does not specify distinctly whether it was lying in the urachus or in the bladder.

The treatment of partially patent urachus has been successful, as a rule, even when simple measures were employed. Simple cauterization has been successful, and one instance is recorded by French in which an umbilical discharge of urine was arrested in a child six weeks old by transfixing with harelip pins and ligating a small, fleshy-looking tumefaction. The case of I. I. Charles, in which the removal of a tight foreskin effected a cure of a vesico-umbilical fistula, has already been noted. Many operators have healed these cases by opening the fistulous tract, scraping out the granulations lining it, and suturing the walls together. Among such operators are Vander Veer, ³³ Bramann, ² R. Pratt, ¹⁸ De Forest Willard, ³⁵ Wörster, ³⁶ Delagénière, ³ Waller, ³⁴ and others.

As a contribution to the study of the disorders arising in connection with the urachus, I desire to report the following observation:

R. G., aged 6 months, of German Jewish extraction, a well-developed and fairly well-nourished child, was brought to the writer's clinic December 30th, 1893.

Family History.—No history of malformations in the families of parents. Patient has two healthy sisters.

Personal History.—The child was in perfect health, exhibiting no morbid condition of any organ or any functional disturbance of any kind, until 3 weeks old, when it had abdominal pains followed by diarrhea and vomiting. Indigestion, doubtless caused by bad feeding, recurred frequently until about November 1st. It then improved and digested its food much more perfectly. In spite of the poor hygienic circumstances by which the child was surrounded, and in spite of its poor alimentation, it grew fairly well and possessed a good amount of adipose tissue. In the latter part of November the child began to be ailing, took its food poorly, and cried when handled. The mother then noticed a protrusion of the abdominal wall below the umbilicus, the skin at first appearing of a normal color, afterward becoming a dusky red. The swelling kept increasing in size and the skin about and below the umbilicus kept getting more red, until, four weeks after the beginning of the malady, the swelling had attained the size of a large orange. The mother then applied hot applications over the tumefaction for several days, with the result that an enormous amount of pus discharged spontaneously through the umbilicus. The mother strenuously denies that fluid of any kind had previously passed the umbilicus. She insists also, upon the closest questioning, that the amount of pus discharged was at least four ounces. The child improved to a certain extent, although pus continued to be discharged from the umbilicus, for two weeks, when cystitis began, as shown by very frequent micturition, great restlessness, and evident pain in the genitals when the urine was voided. At the same time the parents noticed a swelling beginning to be formed in the right inguinal region.

Ecamination made at this time, upon presentation of the child at the clinic, gave the following result: Child 6 months old; girl; of average development; presents no evidence of disease of the heart, lungs, or digestive organs. The child urinates repeatedly during the examination, the urine passed being of a straw color and quite turbid. The umbilicus projects slightly upward and forward, apparently pushed in this direction by a tumefaction the size of a small apple, which also pushes forward the abdominal wall between the navel and the

pubes. The centre of this globoid tumefaction seems to be about one inch behind the abdominal wall. The tumefaction is covered by skin of a very slightly reddened color, but the umbilicus has a red, inflamed appearance. A thin pus trickles slowly from a small opening in the lower portion of the umbilical fold when pressure is made upon the tumefaction. A small pocket probe can be passed downward and backward about one and a half inches. Palpation gives a sensation of bogginess in the region of this swelling. In addition to this enlargement in the median line there is also a swelling in the right inguinal region about one and a half inches in length. This swelling corresponds to a number of superficial inguinal glands which can be palpated through the skin. They have already become bound together by inflammation of the connective tissue between them.

The diagnosis of abscess formation in the urachus was made upon the following grounds:

- 1. By exclusion. The situation of the abscess cavity precluded the occurrence of suppuration within the peritoneum. A localized peritonitis of any kind could not have given rise to so much localized protrusion of the abdominal wall. Inflammation in the cavum Retzii would have caused a tumefaction lower down, and it would not have been likely to discharge through the umbilicus. Abscess formation in the intermuscular planes would have caused tumefaction upon one or the other side of the median line. Abscess formation in the dense linea alba could scarcely occur; and abscess in the subcutaneous areolar tissue could be excluded by the fact that the centre of the swelling was much deeper.
- 2. Positive evidence in favor of the urachus as the site of the inflammation was readily found in every point gained in the history as well as the examination of the tumefaction, which it is unnecessary to repeat.
- 3. Confirmatory evidence was found in the inguinal lymphatic infection, which pointed to the structures of the abdominal wall as the site of primary infection.

Treatment was at first confined to daily irrigations with peroxide of hydrogen solution, with drainage by means of a small piece of gauze introduced into the umbilical opening. After four days' trial of this method improvement was found to be so slow that it was decided to drain the abscess cavity more thoroughly. The child was accordingly anesthetized with chloroform on January 2d, 1894, and the opening dilated with an artery forceps. Examination could now be made quite freely; the probe could easily be passed down almost to the pubes, and laterally to a distance of about one and a half inches. The bladder was not entered by the probe. A small drainage tube was introduced and fastened in place by a stitch. The suppurating inguinal glands were opened and scraped out, and the resulting cavity packed. Daily dressings caused the two cavities to close completely in about one week.

The diagnosis in this case cannot be established with absolute certainty, as might have been done if the patient had died and an autopsy had been held. The occurrence of the cystitis, however, establishes an exceedingly strong probability that the subumbilical abscess arose as a consequence of infection from the bladder through the partially patent urachus; or that, infection of the urachus having occurred by way of the filthy umbilicus, the bladder was involved by the discharge of pus into it from the abscess. In either case it is not argued that the urachus was capable of distention to the degree necessary to enable it to hold four ounces of pus. Doubtless the urachus had been ruptured early in the course of the malady.

Since writing this paper two important papers have come to my notice. The first of these, by Reichel, 20 deals with the development of the urinary bladder and the urethra in a way which seems to place our knowledge of these subjects upon a firm and enduring basis.

The second, by H. Fischer, is quite germane to the present subject. Fischer, after discussing the literature of the subject, summarizes the histories of five cases of subumbilical abscesses. He attributes their causation to infection by way of the urachus, and cites as evidencing such a possibility the case of Wutz, in which suppuration was found post mortem in a small urachal cyst in the body of a man suffering from cystitis and prostatic hypertrophy.

Despite the fact that Fischer has seen five such cases, and that, according to the same authority, Heurtaux has observed six instances, the malady has not been frequently reported in medical literature. It is much to be desired that accurate clini-

cal histories of such cases may be followed by autopsical study of their morbid anatomy.

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PUERPERAL PANOPHTHALMITIS DUE TO SEPTIC EMBOLISM.

BY

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THAT a woman during or shortly after parturition should be liable to complete loss of vision in consequence of the carrying of detached intra-uterine particles through her circulation into the blood vessels of the eye, is a fact not dwelt upon to any extent either in text books of ophthalmology or even in the larger works which treat of diseases incident to the puerperal period. Thus, of the works on obstetrics and gynecology accessible to me, only two writers, Playfair and Garrigues,2 make even a passing reference to this fact. The latter says: "The process begins as a conjunctivitis, but soon pus forms between the choroid and retina and ruptures through the vitreous body and cornea." This error of supposing that the panophthalmitis begins in the conjunctiva is readily excusable, because marked swelling of and discharge from the conjunctiva is one of the earliest signs of panophthalmitis, and might easily lead one not expert with the ophthalmoscope to assert that the process begins in the superficial coverings of the anterior part of the eye and then works inward. As is now well known, the directly opposite of this statement is true.

Treatises on ophthalmology do not afford us much more help, although current literature, both special and general, furnishes numerous examples of these cases, of interest alike to the obstetrician and to the ophthalmologist.

On January 13th, 1893, I was asked by Dr. J. B. Murphy to see a lady from a neighboring town, who gave me the following history: She was 34 years of age and had been married six years, had always enjoyed good health and excellent eyesight, and during all her pregnancies (four in number) had not suffered to any extent except from a slight leucorrheal discharge. There

¹Read by invitation before the Chicago Gynecological Society, February 16th, 1894.

² "American System of Obstetrics," ii., 311.

was no evidence, so far as I could ascertain, of specific disease either in her own person or that of her husband, who accompanied her. Still, her first child had been born dead, her second was living but unhealthy, her third pregnancy ended in a miscarriage, and her last child was also born dead at seven months. This last event took place on December 3d, 1891. Three days before she complained of severe headache on retiring, the pain becoming almost unendurable during the night. The increase in pain was followed by a cracking noise in the left side of the head and by pain in the left eye. When morning came the left eyelids were swollen, and the patient found that she could not distinguish light with the left eye.

During the day the lids of the right eye also began to swell, and soon became so heavy and edematous that they had to be lifted with the fingers to enable the patient to see out of that eye. In two days this eye was also sightless; and so both eyes have since remained. The husband told me that the eyeballs protruded between the enormously swollen lids, but that matter did not commence to run from them profusely until two weeks after they first became affected.

The picture presented by the patient when I saw her was one not to be easily forgotten. The whole orbital regions on both sides were enormously swollen and thickened; the lower lids were everted and could with difficulty be replaced; the conjunctivæ, both ocular and palpebral, edematous and covered with pus, hung in folds over the edges of the lids and hid from view the eveballs, whose corneæ had been almost entirely eaten away; from gaping openings in the latter pus was still oozing. Some attempt at repair had been made on the right side, where to a partially organized leucoma some lens matter was still adherent. The patient was weak and had a rapid pulse. Temperature almost normal. There was no albumin in her urine and no evidence of disease in heart or lungs. There was no evidence of pyemic foci anywhere except in her eyes. I could do practically nothing for the patient, and advised her to return home.

I am indebted to Dr. A. W. Elmer, of Davenport, Iowa, who first saw the case in consultation with the family physician, for the following additional information, that during her second pregnancy albuminuria was present and that she had some fever after the last mishap. The patient still lives, and her eyes,

which are shrunken to about one-quarter of the normal size, do not now give her any trouble.

By far the best account of this ophthalmia, which he properly designates "the most dreadful and most severe disease of the eye that can afflict the puerperal woman, not only in respect of her eyesight but as regards life itself," is given by Salo Cohn in his monograph, "Uterus und Auge." About all that is known of the subject may be found between pages 165 and 172 of that admirable treatise. However, he hardly does Englishspeaking observers justice in neglecting to refer to a number of cases published here and in Great Britain. Among the former I would like to mention a case by Kipp, of Newark, N. J., who reports a remarkable example of unilateral puerperal metastatic irido-choroiditis, with recovery of the patient but loss of the eye, in the American Journal of the Medical Sciences for 1884, page 417. Cohn tells us that cases were observed as early as 1774 by Tennon in the Hôtel-Dieu at Paris. Hirschberg, who saw nine cases, gives the following general description of the disease: The eye affection usually sets in between the second and third week after confinement. There is sudden loss of vision, cloudiness of the vitreous and of the fundus oculi. After one or two days there is intense inflammation of the whole uveal tract. Exudation shows itself in the area of the pupil, and pus is seen in the anterior chamber. Conjunctival edema and pericorneal injection follow the blindness or set in with it. Protrusion of the eyeball with restriction of its movements is next in order; then cloudiness of the cornea and rupture of it or of the sclera are followed by atrophy of the entire eyeball, unless death sooner relieves the patient. According to Galezowski the left eye is most commonly affected, and the second eye succumbs, if at all, shortly after the first.

Virchow was the first to point out the embolic character of puerperal panophthalmitis, but thinks it is not easy to say whether the choroidal or the retinal vessels are the recipients of the emboli. He thinks, however, that when septic endocarditis is present—as it often is in puerperal fever—the ocular sepsis has its origin within the heart.

Hosch found in the vitreous of an enucleated eye, taken from a living patient, organisms resembling the leptothrix, while the distended retinal vessels were filled with masses which were certainly bacterial colonies. Heiberg discovered micrococci in the lymph channels of the cornea of a patient affected by puerperal panophthalmitis.

In a case described by Wagenmann and examined by Leber a bilateral metastatic ophthalmitis occurred during the second labor of a woman aged 37. The next day after an abortion at four months the adherent placenta was removed by the hand. An hour afterward patient had a chill, followed by a temperature of 39.5° C. (103.1° F.). On the seventh day some defect of vision was noticed, and on the next day the left eye became totally blind and the right could barely distinguish light. Seven days after this the patient died.

The autopsy showed septic foci in the cardiac valves, within the muscular tissue of the heart, and in the kidneys. Microscopical examination of the eye revealed multiple emboli of streptococci in the retinal vessels; a diapedesis of these into the substance of the retina and vitreous; masses of emboli in the vessels of the iris, ciliary body, choroid, conjunctiva, the ocular muscles, and in the orbital connective tissue. In the left internal carotid after it gives off the ophthalmic artery, and adherent to its walls, there were found the remains of a thrombus consisting chiefly of white corpuscles and fibrin; no microbes were discovered in this. Wagenmann thought that there had been an embolism of the arteria centralis retinæ, the embolus consisting of soft pieces of tissue containing cocci, and that the first disturbance of vision resulted from the filling-up of the small capillaries and minute branches of the retinal artery. From these as centres of distribution rapidly growing colonies were formed. Penetrating the vascular walls or passing through the intervening capillary network, they soon reached the veins and lymph spaces and encompassed the destruction of the entire organ. Some of the structures within the eye—the vitreous, the ciliary body, the iris, and the cornea-form an admirable pabulum upon which these microbes may feed, and one need not wonder that an eye so poisoned goes rapidly to destruction.

The prognosis, so far as the life of the patient is concerned, is always very grave. All of Hirschberg's nine cases died. Mine is one of the very few on record where both eyes were affected and yet life was preserved. The reason for this fortunate result seems plain. It was a case where probably but a single septic embolus from the uterine wall entered the general

circulation, and that was minute enough to pass through the heart and pulmonary vessels and lodge in the branches of the ophthalmic arteries. Of course cases of septicemic metritis or endometritis complicated by septic foci in such distant organs as the eyes usually show other embolic processes closer to the original sepsis—in the heart, lungs, kidneys, and joints—and are for this reason commonly fatal.

103 EAST ADAMS STREET.

PUERPERAL ECLAMPSIA—ITS THERAPEUTICS.1

BY

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While there has been great improvement in the treatment of puerperal eclampsia, both prophylactic and curative, it is still considered one of the most dangerous conditions to which the pregnant woman is liable, and in none do we need a better understanding of the principles which should govern us in the proper employment of the therapeutic remedies which will be called into requisition. I will therefore confine myself almost entirely to this department of the subject, but do not wish to limit discussion. In order to show the kind of treatment which is most worthy of our confidence, it will be necessary to make some reference to the supposed cause and pathology of the disease, and to direct attention to the opinions of writers on this subject and to results following different methods of treatment.

By the term puerperal eclampsia is understood an affection especially characterized by a variable number of convulsions, which are followed by a complete suspension of intelligence; they usually come on suddenly and unexpectedly, and recur at regular intervals, but may be preceded by pain in the head and restlessness.

The exciting cause of puerperal convulsions at any stage of gestation may be excessive mental or physical exercise. The

¹ Read before the Obstetrical and Gynecological Society of Washington, February 3d, 1893.

stomach may be loaded with undigested food, the bowels may be constipated, or there may be retention of urine and perhaps other conditions which would in themselves be enough to cause disturbance even if the woman were not pregnant. The most common cause, perhaps, would be counted as acute Bright's disease. Almost all authorities consider albuminuria as a grave condition, highly significant of danger; but the practical question for us is, can we, from the presence of albumin in the urine, decide anything as to the condition of the kidneys? If the albumin be present only in the latter months of pregnancy, with edema, headache, nervous symptoms, and finally eclampsia, while the urine is scant, high-colored, and turbid, we might safely say that if eclampsia results it is due to the albuminuria; but even then the kidneys may be free from disease, the congestion of the kidneys being caused mechanically by pressure on the renal veins, as is claimed by Dr. King, who says the normal position of the fetus during pregnancy, before the approach of labor, is transverse, but because of the use of corsets there is a premature descent of the head, which in some cases causes such pressure upon the blood vessels of the pelvis as to produce eclampsia.

In many instances eclampsia has occurred when there was no trace of albumin in the urine, either before or after the convulsions, and in other cases it has been found after but not before the convulsions.

Bright's disease existing before pregnancy should not cause us to give an unfavorable prognosis. I had a patient under my care, about a year ago, who was under treatment for Bright's disease before and at the time of her marriage. She became enormously swollen during the latter part of her pregnancy, and her urine, which was reduced in quantity, contained a large per cent of albumin. She passed through her confinement without convulsions. Her urine still contains albumin, and there is still some edema of her face and ankles.

A case was reported to this Society only a few weeks ago in which the urine became almost solid on the application of heat, but the woman passed through her confinement without accident.

The treatment of puerperal eclampsia may be divided into the preventive and the curative, and will have to be regulated by the peculiarities in each case.

The premonitory signs which usually precede an invasion of this disease are dropsical effusions, especially in the form of edema of the face, eyelids, and upper extremities, with albuminuria, and pain in the lumbar region. A knowledge of these signs is necessary to an early and successful adoption of preventive treatment, consequently the urine of the pregnant woman should be examined at least once every two weeks during the latter months of pregnancy, especially in those cases where there is edema of the face, in primiparæ, and in those whose urine has at any time contained albumin.

Having detected the presence of these signs, or any other well-known premonitory symptoms, we must vary our treatment according to the condition of the patient. If she is strong and plethoric we should give an active saline cathartic and put her on an unstimulating diet. If, on the other hand, she is anemic, a mild laxative and a nutritious diet should be ordered. If there is edema with albuminuria, diaphoretics and diuretics should be given, jaborandi being perhaps the best. The wine of colchicum, in as full doses as can be borne, is said to be an excellent remedy. I have never tried cups in these cases, but believe that, if freely applied over the kidneys, some good might result.

During a convulsive seizure certain precautionary measures should be adopted. The tongue should be properly protected from injury—but not with the finger of the nurse, as is reported by a member of this Society as having been done in his presence. The clothing should be loosened to prevent any obstruction to free respiration and circulation, and the patient be unrestrained as far as possible. After these precautionary measures we should adopt such of the following methods as may seem best suited to each case.

Emetics.—In order to remedy any possible irritation from the presence of undigested food in the stomach, an irritant emetic should be given. Ten grains of the sulphate of copper dissolved in a wineglass of warm water, or the hypodermatic injection of the one-tenth of a grain of apomorphia, will usually be found efficacious. All are familiar, I presume, with the case reported in Bedford's "Obstetrics," in which a young primipara, eight months pregnant, ate heartily of preserved quinces and plumcake, and was taken two hours later with convulsions. An emetic was the remedy in this case. She was given twenty grains of the sulphate of zinc in half a teacup of warm water, and

in three minutes there was free emesis and the patient was relieved, passed on to full term, and was presented with a fine boy.

Cathartics.—If the irritation is in the intestine, or if there is constipation, a seidlitz powder, calomel, claterium, or even croton oil should be given, or an enema of an ounce or two of Epsom salts in half a pint of warm water should be thrown as far up the bowel as possible.

Cathartics are not given simply to unload the intestinal canal, but to cause general as well as local depletion. The production of catharsis is the surest method of relief in dropsies, as well as in hyperemia of the brain, where cathartics do good not only by depleting but by acting as revulsives.

Anesthetics.—The use of chloroform by inhalation is of unquestionable benefit, not only in subduing the convulsions, but in prolonging the interval between them. If it be inhaled only during the paroxysm it appears to have no effect in shortening the attack; but if exhibited before its expected return it will often prevent its recurrence for hours together, during which time the labor may be completed and the patient made comfortable. If chloroform is not administered in time to prevent a paroxysm, it would be as well, perhaps, to wait until it is over, as the administration of an anesthetic would be apt to increase the difficulty to a dangerous degree. As soon, however, as the respiration becomes easy the inhalation of chloroform should be commenced and carried to the production of complete narcosis. as nothing short of this will arrest the convulsions. In severe cases it should be continued for three or four hours, then suspended for a time, and recommenced if convulsions should again show themselves. By a judicious interruption of its employment it can be continued, in suitable cases, for twenty-four hours or longer; but it requires to be used with great caution, its exhibition being contra-indicated where the circulation is depressed or where there are any apoplectiform symptoms.

Somnificants.—Chloral is a powerful hypnotic, and, while it produces deep sleep from which the patient awakens without headache or depression, it should be used with caution in persons with weak or fatty heart, as it depresses the heart, lowers arterial tension, and decreases body temperature. It has been used to relax the os uteri and to modify or prevent convulsions. For this latter purpose it has been given in from thirty-to forty-grain doses, and repeated at short intervals in twenty-

grain doses. Butterfield, of Indiana, claims that chloral is very uncertain in its effects on different persons, a dose that seems all right with one being either dangerous or of no effect in another; that two grains proved to be a poisonous dose to his wife.

Opium.—The action of opium is so well known to the members of this Society that I will only take your time for a moment to consider it. Sometimes the comatose condition of the patient or the rapid succession of paroxysms prevents the administration by the mouth of opium or any other remedy. These obstacles to medication are overcome by the hypodermatic injection of a solution of its chief alkaloid, morphine, which, unlike opium, does not produce cerebral congestion, and we gain an additional advantage by the rapidity of its action.

In convulsions from irritation following labor, as from a clot of blood in the cervical canal, the removal of the clot and the hypodermatic injection of the one-fourth of a grain of the sulphate of morphine is all the treatment that I have found necessary in several instances.

Antipyretics.—Two fifteen-grain doses of antipyrin are reported to have been given in one case where a woman six and a half months pregnant had a number of convulsions, but none after the second dose. She went to full term, but the child was still-born.

Diaphoretics and Diuretics.—Aconite has been called the therapeutic lancet, and it is claimed that it is responsible to a great extent for the disuse of venesection. The tincture of aconite root, in from one- to three-drop doses every half-hour, has frequently been resorted to, and is well spoken of by many who claim that it will quickly cause profuse perspiration, with reduction of body heat from two to three degrees. Its power over the circulation, respiration, and transpiration renders it of great value, in proper doses, in all affections characterized by high resisting pulse, dry hot skin, and elevated temperature.

Jaborandi has taken high rank as one of the most powerful and certain in its diaphoretic action. In dropsies it is perhaps as safe as any other remedy comparable with it in power. Wood says: "In uremia it is the most efficient remedy at our command, and in acute or chronic Bright's disease it is of great value, sufficing often in the one case in bringing about convalescence, and in the other greatly to prolong life and make it comfortable."

To me jaborandi seems to be the most valuable single remedy we have as a prophylaetic against puerperal convulsions. It produces excessive diuresis and diaphoresis, and proves a most valuable agent in relieving the dropsical accumulations. I have used this remedy in a number of instances with excellent results. In one case of a woman seven months pregnant, where there were general dropsy, albumin in the urine, headache, and dyspnea, all the unpleasant symptoms were gone in about two weeks. In another case, to which I was called by the late Dr. Mauss, the woman, Mrs. J., was taken with convulsions just after the birth of her child, which occurred about an hour before I was called. She was in her third convulsion when I entered her room. She was enormously swollen, and, as it was impossible to give medicines by the mouth, there was given hypodermatically one-half a grain of morphine and the one-fifth of a grain of pilocarpine. It was found unnecessary to repeat the morphine, as the woman slept all night long and until late the next day without a return of the convulsions. The pilocarpine, however, was continued in one-tenth-grain doses every three hours, for four doses, which caused a very profuse diaphoresis, so that when I called the next morning all the clothing about the patient was literally soaked, the salivary glands were active, and the secretion from kidneys abundant. She passed water every little while into the bed, which, with the perspiration, had so saturated the mattress on which she was lying that it had passed through the bed and had made quite a puddle on the floor. The dropsical swelling rapidly disappeared, so that a few weeks later, on making a call in her neighborhood, I met Mrs. J., but did not recognize her, as she was now a bright little woman, weighing not much over one hundred pounds, while at the time she was having convulsions she looked as if she would weigh not less than two hundred pounds.

In another case where pilocarpine was given the patient did not recover. The lady, bright and chatty, was joking with the attending physician about the new experience she was going through, when, without any premonitory symptoms, she was seized with convulsions and had a number of them in quick succession. I was sent for and requested to bring my instruments. On making an examination I found the os fully dilated, and, after the administration of chloroform, I applied the forceps and delivered her of a healthy female child, now over a year old. She had one convulsion after the birth of the child, and

was given one-fourth of a grain of morphine and one-tenth of a grain of pilocarpine hypodermatically. I remained at the house for about an hour, during which time there was no return of the convulsions. Twelve hours later I was again called, to find her in convulsions, and she now remained unconscious longer and longer after each attack. Fearing she would die, I advised that another physician be sent for, which was done, and a member of this Society, Dr. Prentiss, was called, but the case terminated fatally a few hours later.

Depressants.—Calabar bean is rather limited in its therapeutics, but has been used with advantage in tetanus to diminish reflex excitability. Butterfield, in the Therapeutic Gazette, 1880, says: "Having in a very urgent case failed to permanently arrest the convulsions by chloroform and other usual remedies, I determined on theoretical grounds to resort to the hypodermatic injection of physostigma. My first injection contained about the one-fourteenth of a grain of the extract, and, to my great surprise and joy, the fits at once vanished, never to return." He also reported a second case with like good results.

Nitrite of amyl has been suggested as being an efficient remedy in puerperal convulsions, and has been given not only to arrest the convulsions, but to produce uterine relaxation. I have no doubt but that there are times when it would be perfectly proper to use it—when, for example, after a paroxysm, the heart beat is almost imperceptible, it might be given, for it has the power of dilating the blood vessels and increasing the heart's action. But this remedy must not be pushed too far, nor should it be given if the face is flushed or if the pulse is full and strong, as it might produce not only uterine contraction but uterine hemorrhage as well. It is very quick in its action, which makes it a valuable remedy in some emergencies.

Nitroglycerin has within the last few years been used quite largely in the London hospitals, with asserted excellent results, in angina pectoris, asthma, uremia, puerperal convulsions, and in other affections where the nitrite of amyl has proven of value.

The bromides have superior claims as curative agents in puerperal convulsions, though I would not like to discard either chloroform or morphine for them. I use bromide of potassium because its physiological action is known to be a sedative to the motor system, followed by general nervous sedation. It causes a decrease of blood in the capillaries of the brain and spinal

cord, and consequently in the peripheral extremities of the nerves of sensation. The drug does not act during a paroxysm, but restores tone and diminishes the tendency to spasms.

Veratrum viride was used many years ago as a remedy in puerperal convulsions, but in the onward march of medical science it seems to have been lost sight of until comparatively recently, when writers seem to vie with each other in extolling its virtues, especially as a substitute for blood-letting.

Dr. Oatman, of California, in a paper read before the International Medical Congress held in this city in 1887, lauded the virtues of this remedy, claiming that it is safe, speedy, reliable, and permanent in its action; that it can be given at any time in the case; that in serious cases it had better be given in excessive doses than risk the continuance of the convulsions, as the remedy is not dangerous, its excessive action being under speedy control, alcoholic stimulants quickly relieving the depression of the circulation which it might cause.

Bartholow, in his "Materia Medica," classes veratrum viride among the motor depressants. He gives the dose at from two to five drops, and says the excitement of acute mania, of maniacal delirium, and other forms of mental disorders in which a cerebral hyperemia may be supposed to exist, is successfully controlled by this remedy.

Wood says: "When true sthenic arterial excitement is to be controlled in any disease, except it be gastritis, veratrum viride may be employed as a prompt, thoroughly efficient, and at the same time very safe remedy—very safe, since it is almost incapable of producing death in the robust adult, unless used with great recklessness and in repeated doses. Cardiac weakness would contra-indicate its use."

Potter says: "Veratrum viride is inferior to aconite in most of the fevers and inflammations, by reason of its lacking power over excretions, but affects the respiration to a much less degree than aconite. Veratrum viride has been used with remarkably good results in many cases of acute mania and puerperal convulsions, large doses being administered without danger and with decided benefit. In one case twenty drops of Norwood's tincture were administered every hour for five days, the patient making a good recovery."

Dr. C. M. Witmer gave five drachms of the tineture of veratrum viride in a few hours to a short, stout, muscular woman

to whom he was called in consultation. "After delivery she was taken with convulsions. Chloroform was administered, but seemed to have no effect; then fifteen drops of the tincture of veratrum viride were given, but she had two more convulsions in quick succession; as a third came on I urged that a teaspoonful should be given at once, but this was objected to. I called attention to the character of the pulse, which was only 62, but so hard as to make me fear that apoplexy was rapidly approaching and was extremely suggestive of the lancet. I gave her one teaspoonful, and in two or three minutes another, in fifteen minutes another, and then several half-teaspoonful doses. She vomited freely, but only once. After the second teaspoonful the pulse gradually came down in force and frequency." He further says: "I do not believe there is any harm in the medicine as long as the convulsions continue. If the case is a very violent one, with a tendency to apoplexy, with a continued unconsciousness, I would only measure the quantity by the effect it produced, for these cases do not wait, and hesitating treatment would be of but little value."

Venesection.—In regard to the employment of blood-letting in puerperal convulsions there is a great diversity of opinion. Nearly all the older obstetricians agree as to its value where there is plethora with bounding pulse and flushed countenance, claiming that during the convulsion the patient will incur the hazard of death from apoplexy if the plethora is not promptly relieved by venesection, that the bleeding relieves the convulsions, lessens secondary congestion, prevents injury to the nervous centres, and shortens the period of unconsciousness, even if it does not arrest the paroxysm; while others would confine its employment to eases where the convulsions have followed a profuse hemorrhage, forgetting, no doubt, that convulsions may arise from loss of blood or be accompanied by an anemic condition of the brain and spinal cord. Some years ago, when the subject of venesection was being discussed by our Medical Society, on being called to a case of puerperal convulsions I stood, with lancet in hand, waiting for a favorable opportunity to bleed, not daring to thrust my lancet into her jerking arm; but as the convulsions were off the pulse would become so weak that I did not dare take a single drop of blood, but gave instead bromide of potassium with the fluid extract of valerian, and she recovered, which I fear she would not have done if I had bled her.

Induction of Labor.—When, notwithstanding the employment of the various therapeutic agents spoken of, the convulsions continue and increase in violence, we are brought to consider what other treatment is necessary. In many instances albumin, as a sign of renal disease, disappears entirely in a comparatively few days after delivery, and for this reason a large majority of practitioners seem favorable to, and advise, the induction of labor when the life of the mother is placed in jeopardy by the increasing gravity of the albuminuria. Several eases of this kind have fallen under my observation, occurring between the fourth and seventh months of pregnancy, the convulsions coming on unexpectedly in each case. In all it was thought necessary to bring on labor, and in each case the albumin had disappeared in a few days after labor had been completed.

Elective operations of this kind should only be resorted to when there is no longer any possible chance of saving both mother and child. When it is found necessary to bring on labor, it has been found that the injection of an ounce or two of glycerin between the placental and uterine walls will initiate uterine pains in from one to three hours, and the patient be more easily and quickly delivered than when the bag of waters is punctured.

1528 9TH STREET, N. W.

MECHANISM AND TREATMENT OF COMPLETE PROCIDENTIA UTERI.¹

BY

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(With thirteen illustrations.)

PART III. THE TREATMENT OF COMPLETE PROCIDENTIA UTERI.

Interesting and complex as is the study of the anatomy and physiology of complete prolapsus, as is also the study of its mechanism, the great importance and necessity of such study is

¹ Continued from page 320.

shown when one comes to consider the treatment. The success of treatment will indorse the ideas of the pathology held by the one undertaking it. The treatment resolves itself into two classes:

Class I. Non-surgical treatment, which includes therapeutics, support, and massage.

Class II. Surgical operations.

Therapeutics and Support.—The main indication is to return the organ to the normal position as soon as may be, and maintain it there. In cases of long standing, in which the cervix is inflamed and erosions have taken place, as well as in those cases where the uterine body is sensitive, which is not infrequent, it is necessary to use medicated tampons. Many times astringents are applied. As a general thing the tissues are already hardened by exposure to the air, and emollient applications are needed instead of astringents. Applications of solutions of nitrate of silver (five per cent) will heal the erosions as quickly as anything; sometimes I have used powdered bismuth. Antiseptic cotton with vaseline and bismuth makes the most satisfactory tampons. Oakum is harsh; and wool, which was highly recommended a few years ago and still has its advocates, is not agreeable to the patient, and is unsatisfactory in that it permits the secretions to percolate through, and when glycerin applications are employed this is a decided disadvantage. The same forces which act to bring about the displacement will act to press the uterus down again and to expel the tampon. Sometimes placing the patient in the knee-and-elbow position will throw the organs better into place, and will make it possible to wedge the tampon in the angle formed by the neck of the uterus and the curving sacrum. In two or three cases in which there were erosions of the surface brought about by friction, and where a pad could not be retained, I found I could use a "doughnut" pessary. This was prevented from rubbing the erosions by a soft tampon of cotton, small and carrying the disinfectant dressing. After the erosions were healed in this manner the pessary alone sufficed.

The erosions and eversions of the cervix may be treated with applications of Churchill's tincture of iodine. When very extensive, tannic acid can be mixed with the tincture.

Massage.—Much has been written in regard to the utility of massage in cases of complete prolapsus. It is interesting to

note that Thure Brandt made his first successes in the cases of complete procidentia, led to adopt this treatment from the fact that he had successfully treated a soldier with complete prolapsus of the rectum. In 1859 he cured a woman of complete prolapsus by means of massage. Other European physicians report success with this method, among whom are Frédéric and Profanter. In this country Boldt, Vineberg, and Walter have introduced these procedures with varying results. Vineberg says that his success has not been brilliant in the four or five cases of complete prolapsus, while in other gynecological displacements and affections he has had success. Koupidonoff says that Suguireff has had such brilliant results, thanks to this method, that he has needed no other treatment. The method that he recommends is as follows, and should be given eighteen or twenty days in succession, with rest after each séance:

- 1. Patient upon the knees, and a light sacral percussion is given.
- 2. Patient placed on the side in the usual position for pelvic massage. The finger of one hand passes from right to left around the vaginal wall; it then fixes the uterus in anteversion, while a rotary motion is made with the other hand over the abdomen above the fundus.
- 3. Raise the uterus on the finger, and, with the hand outside above the pubes, lift it again and again.
- 4. Uterus fixed in anteversion with the vaginal hand, while with the free hand circulatory movements should be made.
- 5. The patient should lie upon the back, with knees flexed, raise the pelvis, and try to separate the limbs when held by assistant.

Another writer (Buernir) claims that he has had excellent results with a series of gymnastics without the massage, which consisted in using first the adductors to the farthest extent, as in the method just described, placing something between the knees to further resistance, and then abducting the thighs as far as possible, tying them together first, and then contracting and drawing in as much as possible the levator ani and other muscles of the pelvic floor.

My personal experience has not been great in these directions. As I have said before, these cases have been in dispensary practice, where the time and rest necessary for the proper carrying out of Brandt's method and gymnastics would be wanting. I am

doubtful of success in many cases of the poor women whose trouble has been brought on and aggravated by hard work and lifting heavy burdens.

Pessaries.—Pessaries have, so to speak, gone out of fashion as operative procedure and massage have laid claims to attention. Nevertheless pessaries have a great value in these cases. I believe that they can not only ameliorate the condition, but that in certain cases, where the prolapsus is due to subinvolution and pelvic circulatory disturbances, the returning of the uterus to its place and the holding it there finally result in a restoration to the normal condition of things. They are useful to use temporarily, until erosions are healed and the size of the organ is reduced, before attempting an operation. The old pessaries with a perineal bar which curves outward over the perineum, and held in place by a band around the waist, are a barbarism, as is also the T-bandage recommended by Duncan and others. They are useless and unnecessary. Three varieties of pessaries are all that I have found necessary—the doughnut, as it is called, for the severe cases and heavy uterus, and a worn and relaxed or lacerated perineum; a soft Thomas retroflexion pessary with the bulb, bent in the form of a Gehrung, which takes up the slack of a cystocele admirably; and a Hodge in cases where the uterus is light or there is prolapsus of the posterior wall, and also in those cases where the uterus is retroverted or retroflexed.

Surgical Operations.—The surgical as well as the non-surgical treatment has always followed the ideas of pathology, from the time of Euryphon, who, we are told, suspended his patient twenty-four hours by the feet, and Rodericus à Castro, who advised that the prolapsus should be attacked with a piece of red-hot iron, as if to burn it, when fright would cause it to recede within the vagina, down to the present time of laparatomies to shorten the round ligaments, and the hysteropexies which fix the organ to the abdominal wall, or the still more radical procedure of removing the uterus entirely. First there were operations upon the vulva which, leaving out the possibilities of marital relations and future pregnancies, closed that orifice; Baker Brown, Credé, Kachler, and Linhart were its advocates. Next the attention was turned to the vagina. Caustics were employed: nitrate of silver by Meding; nitric acid by Phillips; acid nitrate of mercury by Langier; the hot iron by Velpeau, Kennedy,

Dieffenbach, Desgranges, who also employed hot needles; sulphuric acid by Selnow, Richter, Hedrich, and Rokitansky. Scanzoni and others, observing that prolapsus was healed by pel-

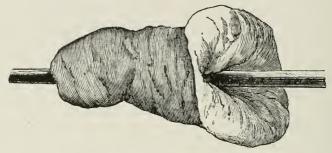


Fig. 34 (Pozzi).—Amputation of cervix (Huguier's method).

vic peritonitis, which caused adhesions, produced these artificially. Chippendale used inoculation to produce blennorrhagia. Bellini and Blasius attempted to fix the organ in position by narrowing

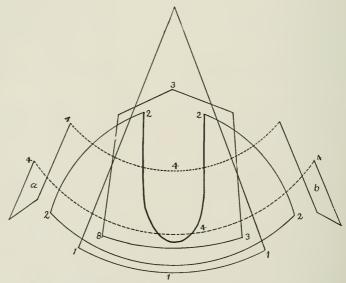


Fig. 35 (Winckel).—Showing various forms of denuded surface in posterior vaginal wall in operations for prolapsus uteri. 1, 1, 1, 1, Hegar's; 2, 2, 2, 2, Bischoff's; 3, 3, 3, 3, Simon's; 4, 4, 4 a b, Winckel's.

the vagina. All sorts of elliptical fragments were cut from the posterior vaginal wall by Hale, Velpeau, Dieffenbach, Baker Brown, Sims, Emmet, and others, and the surfaces were then

sutured together. Huguier introduced an operation for amputa-

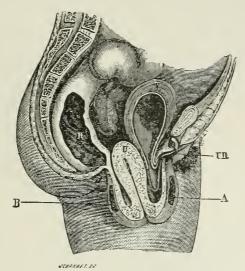


Fig. 36.—Le Fort's operation for closure of the vagina. A, anterior denudation: B, posterior denudation; U, uterus; R. rectum; Ur, urethra.

tion of the neck (Fig. 34), calling all cases of prolapsus hyper-

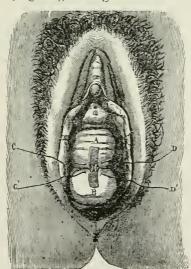


Fig. 37 (Pozzi).—Le Fort's operation for closure of the vagina. A. denuded surface upon the anterior wall of the vagina; B. denuded surface upon the posterior wall of the vagina; C. C', suture on the left side; D. D', suture on the right side.

trophies of the cervix, and also retrenched the vaginal wall, intro-

ducing the finger into the bladder and gathering up the tissue by pins which traversed the cellular tissue between the bladder and vagina, and made a pedicle by throwing a thread around the pins and using the écraseur. The operations, elytrorrhaphy of Simon, episiorrhaphy of Spiegelberg, the perineorrhaphy of Simon and Hegar, and a host of other modifications of operations for narrowing the vagina, are familiar to all (Fig. 35). In themselves they are usually ineffectual. When they are successful I think it is due to the stimulating effect of the operation, which results in setting forward the arrested involution to its completion—the same effect which is sometimes obtained by the use of pessaries and tampons with glycerin applications and massage.

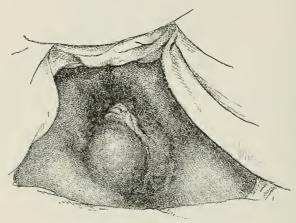


Fig. 38.—Vulva, showing no laceration, in case of complete prolapsus in which Alexander's operation was not successful.

Le Fort's Operation.—The most useful operation in my experience has been that of Le Fort (Figs. 36 and 37). This has not been as popular with American operators as it has deserved, probably because of its supposed interference with childbirth. The French physicians who use this proceeding of Le Fort's say that it is no obstruction. The partition which this operation forms, practically making two vaginæ, becomes thinned and attenuated in labor, and at the last moment can be cut. Dr. E. M. Cushier and others have obviated this difficulty by making the partition more to one side—a "lateral Le Fort" they have termed the operation. The several cases upon which I have operated have proven successful, the results remaining permanent after years have intervened. Du Bois reports nine cases, in one of

which he had a return of the trouble from the patient's falling down-stairs. A child was born in one of his cases. At the New

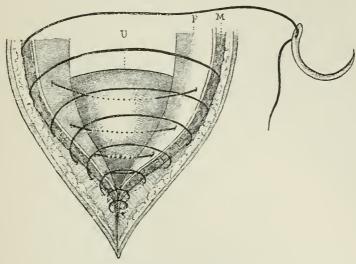


Fig. 39.—Pozzi's method of hysteropexy.

York Infirmary for Women and Children, where the operation

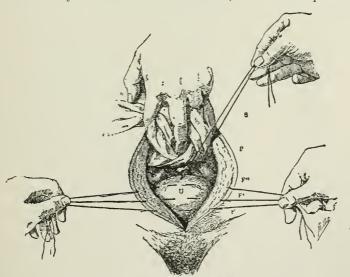


Fig. 40.—Terrier's method of hysteropexy.

has been performed a number of times by Drs. Blackwell, Cushier, and McNutt, as well as myself, it has been successful in all

cases so far as heard from, with the exception of one case in a young woman. The trouble was probably due to congenital or inherent causes, which produced the trouble in the first place.

Shortening of the Round Ligaments.—This procedure, which

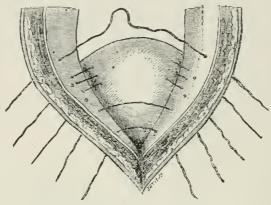


Fig. 41.—Olshausen's and Sänger's method of hysteropexy.

Alexander has popularized, appeals to one very directly. If the uterns has fallen down the easiest way to remedy it will be to pull it up. It has been more widely used in backward displace-

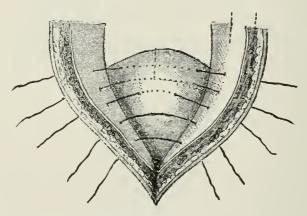


Fig. 42.-Leopold's method of hysteropexy.

ments than in cases of complete prolapsus. Alexander states that he has done the operation as many as twenty times a year. Since the anatomical relations are better understood, operators have no difficulty in finding the round ligaments and realizing that they are entities in the pelvis. At present, when used in

complete prolapsus and the cervix is large and elongated, the latter is amputated before the ligaments are shortened. Imlach says it is only applicable in cases where there is no rectocele or cystocele. The only time that I ever used the operation in complete prolapsus was for a woman past the menopause, who had a small, procident uterus, with very little cystocele and no rectocele. The ligaments were easily found and of good size; they were shortened very nearly three inches. She made a good recovery, but before three months had passed the trouble began to return and soon was as bad as ever. Had she had Le Fort's operation I have not the slightest doubt that she would have been as well to-day as at the time of the healing of the operation. Now she wears a pessary, the Gehrung's modification

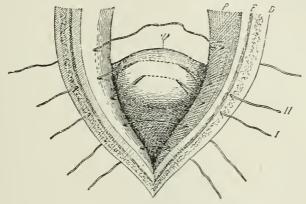


Fig. 43.—Czerny's method of hysteropexy.

which I have described. This was doubtless a case of displacement owing to congenital formation of pelvis or ligaments, or both. (See Fig. 38.)

Procedures involving Laparatomy.—It is not surprising, in view of the widespread resort to laparatomy and the comparative ease and lack of danger with which the abdominal cavity is entered in these days, that at last, and as a final triumph to surgical procedures, the procident uterus should be looked after from above. The various methods of hysteropexy (Figs. 39 to 43), and the shortening of the round ligaments within the abdominal cavity for complete prolapsus as well as for the backward displacements (Fig. 44), have claimed the attention of operators. It is not time yet to pronounce upon the success in relation to this trouble.

Schücking's method (Fig. 45). This operation consists in passing, by means of a curved needle, a suture through the cervix of the procident or displaced uterus forward into the cellular tissue between the vaginal and bladder walls, coming out in the vagina, and tying the suture in such a way as to secure the for-

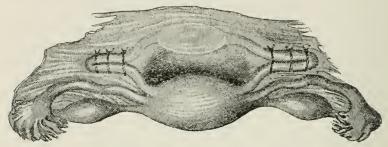


Fig. 44.-Wylie's method of shortening the round ligaments by intraperitoneal fold.

ward position of the uterus. The simplicity and lack of danger in this operation commend it. One operator says he has performed the operation two hundred times without difficulty; he

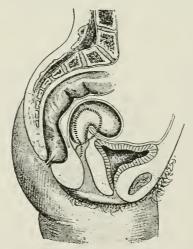


Fig. 45.—Schücking's operation of hysteropexy.

does not state in how many cases he has used it for complete prolapsus. Its author claims success for it in this direction.

Hysterectomy. The radical procedure of removing the uterus has latterly claimed the attention of operators. Polk has reported cases in which he has done this and stitched the slack

of the vaginal tissues to the abdominal walls. A Philadelphia physician told me that he did not consider any other operation, but proceeded at once to perform hysterectomy in all cases of complete prolapsus. The French physicians have recently reported against such procedure. It remains to be seen how hysterectomy for this trouble will be regarded. Those who are in favor of it argue that the operation of hysterectomy is readily performed and with comparatively little danger to the patient, and that by so doing the patient is relieved beyond peradventure. Others claim that it is unsurgical to remove more than is essen-

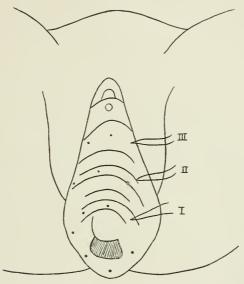


Fig. 46.—Freund's method of passing the silver-wire sutures around the vagina in his new procedure for complete procidentia.

tial to the relief of the condition which calls for surgical interference, and that a high amputation of the cervix, or other of the numerous devices which are employed, will do this.

Freund's new operation. Freund has recently published the report of several cases upon which he employed a new procedure with success. It consisted in encircling the vagina with silver-wire sutures, quilted in at equal distances, beginning near the cervix (Fig. 46). The uterus was restored to place in much the same way as in a Le Fort's operation. The sutures were left, and the operation was performed without ether. The patients were kept quiet only a day or two. Edebohls, of this city,

has also performed the operation in several instances. He says that the greater ease of doing the operation repays the administration of ether, and he uses silkworm gut instead of the silver-wire sutures recommended by Freund. It is of course too early to predict the success of the operation, but it looks rational, and its simplicity will recommend it to a careful trial and investigation.

Summary of Treatment.—1. Restore uterus to place. If sensitive and eroded, use antiseptic tampons of cotton. If tissues are soft and relaxed, astringents, as tannin and iodine, should be used. Heal the erosions with five-per-cent solution of nitrate of silver. If the tissues are hardened by long exposure outside the vagina, astringents should not be used, but vaseline or some oily preparation should be employed.

- 2. Massage has not been found of much benefit in these cases. If it is to be of use the improvement will be immediate. It would not avail in cases where there is a congenital tendency to displacements, but in those in which involution has not gone on to completion, or there is trouble with the circulation, massage and gymnastics may be of use.
- 3. Pessaries which are well fitting may relieve the patient greatly, and should be used as soon as possible, as they hold the uterus better in place than any tampon. Many patients are made very comfortable with pessaries, which they learn to take care of themselves, and some cases have been cured after a time by the support of the organ, the congestion has been relieved, the tissues have become normal, and the ligaments have regained their tonicity.
- 4. The surgical procedures from the earliest times have been without number. Many have become obsolete. Not much reliance has been placed upon those which simply narrow the vaginal outlet. The most serviceable of all of these is the Le Fort's operation. Many surgeons perform high amputation of the cervix, and combine with it, if the case would seem to demand, some of the operations for narrowing the vagina. The shortening of the round ligaments is generally conceded at the present day as not applicable to the cure of complete procidentia, and many believe that the time is not far distant when it will cease to be considered. Conservative surgeons regard ventrofixation and hysterectomy as measures too radical to be employed generally, and the success of vaginal fixation, as recommended by

Schücking and many others who have followed his method, has not been established. Gynecologists will look for the results of the new and simple procedure recommended by Freund with the greatest interest.

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A CASE OF DOUBLE OVARIOTOMY.

BY

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I REPORT to-night the history of a case of multilocular cyst of both ovaries. On November 6th last I was called to see Miss M., white, et. 22 years, who was suffering with violent pains in the lower abdominal region. She had been under the care of another physician for three weeks previously, and by him was dismissed from treatment as relieved or cured. Her early his-

tory and general appearance were very good, she having been sick but twice in her lifetime, namely, with measles at 10 and la grippe at 18 years of age, neither disease leaving any sequelæ. Menses appeared at 17; have since been normal in quantity, frequency, physical appearance, and sensation. Leucorrhea slight in quantity and not constant. All other functions normally performed.

Examination.—Is plump, well nourished, and with good color; the abdomen slightly irregular in outline, somewhat enlarged, tender on pressure, and occupied by a tumor or mass rising slightly above umbilieus and having a general direction obliquely from left to right side; hymen intact; vagina small and hyperesthesic; uterus small, eavity measuring two inches, anteflexed, high up, and fixed against symphysis pubis. A large, lobulated mass, freely movable above and firmly fixed below, with obscure fluctuation, was marked out by bimanual exploration. Below and to the left of the uterus was a small oval body, which, with a tense band adjoining, was supposed to be the ovary and tube on that side. The diagnosis of multilocular cyst of right ovary with extensive deep adhesion was decided upon and immediate removal advised. The usual treatment for pain was instituted with good results, and on November 8th she was re-examined under ether with Dr. Tompkins, who approved the general diagnosis, but disagreed concerning the deep adhesion, he believing the tumor non-adherent with a long pedicle. After some unavoidable delay and alterations in plans she was sent to the Providence Hospital, and on November 18th the operation was performed. The preparation of the intestinal canal and skin was earefully observed, together with the most minute details of asepsis and antisepsis of operator, assistants, instruments, dressings, etc., the care of the latter being left to the able management of Dr. R. D. Boss. Assisted by Drs. Tompkins and Gill, the usual incision was made, and the bladder, which was very high up, carefully avoided. The peritoneum being opened, the tumor was found to be slightly adherent below and to the left; the adhesions were freed, and the peculiar condition of long pediele with three complete twists or turns was observed. Evacuating the contents, the pedicle was untwisted, and ligated in the usual manner. What had been supposed to be the lobulated portion of the original cyst proved to be a cyst of the left ovary, very deep down in the pelvis, and adherent to everything

in that locality-uterus, bladder, rectum, sides of pelvis, and other tumor. The adhesions were with considerable difficulty broken up, the contents of the cyst evacuated, and the broad pedicle ligated in sections. Attention was now directed to the toilet of the peritoneum, when it was discovered that the ligatures on both sides had cut through the friable pedicles and partially slipped off, allowing very active hemorrhage. The uterus was grasped, lifted up into the incision, and pressure forceps applied to the bleeding surfaces. Second ligation was now in order and was very tedious, a portion of the uterus being included in the construction of the new pedicle, and many and varied ligatures required. Hemorrhage was discovered deep down in the pelvis at the site of a deep adhesion; this required several ligatures and the actual cautery. The cavity was now flushed and dried, and then closed with interrupted silk sutures passing directly through from skin to peritoneum and out on the opposite side. Shock was not very marked, reaction taking place promptly. Bowels acted upon in the first twenty-four hours. Convalescence uneventful. Catheter used but once. Sutures removed on ninth day. Union by first intention throughout, except through the skin at one point for about half an inch; this promptly healed. Patient sat up during second week, and returned home on December the Sth, twenty-one days after the operation. She has been in excellent condition ever since.

The temperature was practically normal throughout, except on the evening of the third day, when it reached 100.4°.

1400 L STREET, N. W.

CORRESPONDENCE.

"ACUTE PUERPERAL CELLULITIS AND TRUE PELVIC ABSCESS."

To the Editor of The American Journal of Obstetrics.

SIR:—I have read with much gratification the article by Dr. Charles P. Noble, with the above title, which appeared in the April number of your JOURNAL, because it brings the ultimate, if somewhat tardy, recognition of a principle and a pathological

condition for the existence of which I have contended, against stubborn and uncompromising opposition, for twenty years. One of the younger and most radical abdominal surgeons of our time therein confesses, with a candor which does him credit, that such a pathological condition as inflammation of the pelvic cellular tissue *does* exist, and that suppuration of such an extraperitoneal pelvic exudate *does* take place. And he has been so fortunate as to be able to verify his diagnosis by finding the appendages and the pelvic peritoneum, as exposed by median abdominal section, in a healthy state.

This proof, coming from so able a source, must at last convince those of our colleagues who still deny the occurrence of any pelvic inflammation or suppuration other than that beginning in the Fallopian tubes, and thence extending, if it does so extend, to the pelvic cellular tissue. The great argument of these gentlemen is that they have never seen a case of true extraperitoneal pelvic abscess in any of their operations for pus in the lower peritoneal cavity. This fact can be explained only by the supposition that they never looked for the pus elsewhere than in the tubes, and obstinately refused to find it anywhere else. The only road to salvation for these gentlemen seems to be through a median abdominal incision into the peritoneal cavity.

I trouble you with this communication, not so much because I wish to claim any credit for my position on this question, although I have had to fight both unbelief and ridicule, but because I cannot help expressing my satisfaction at seeing my views thus confirmed and vindicated by (if I may so call Dr. Noble) the enemy himself. Still, I desire to eall attention to the fact that so long ago as 1880, in a paper entitled "The Diagnosis and Treatment of Obscure Pelvic Abscess in Women, with remarks on the Differential Diagnosis between Pelvic Peritonitis and Pelvic Cellulitis" (Seguin's Archives of Medicine, December, 1880), I laid down clear and definite rules for the diagnosis and treatment of these same cases of "true pelvic abscess" described by Dr. Noble. And six years later ("The Treatment of Pelvie Abscess in Women by Incision and Drainage, with a report of ten cases," American Journal of Obstet-RICS, February, 1886) I reiterated the same doctrines and practice; and again in 1892, in a paper read before the New York Obstetrical Society ("The Surgical Treatment of Extraperitoneal Pelvic Effusions," New York Journal of Gynecology and Obstetrics, February, 1892), I endeavored to convince my opponents that inflammation and suppuration of the pelvic cellular tissue actually occur. I was pleased on the latter occasion to find that one of the most obstinate defenders of the exclusive intraperitoneal (tubal) source and location of suppuration—Gill Wylie—so far retreated from his former position as to admit that after parturition a pelvic cellulitis did occasionally occur. Dr. Polk, however, could not be persuaded that this was the case, and maintained his uncompromising attitude of exclusive intraperitonealism. Perhaps even he may now "throw up the sponge"?

In one particular I am ready to concede a point to Dr. Noble—that is, on the usual puerperal origin of pelvic cellulitis. I quite agree with him as to this, and admit that I formerly was mistaken in supposing that pelvic cellulitis occurred at all times and was even more common than pelvic peritonitis. As a result of increased experience I now know this to have been an error, and freely concede the rare occurrence of pelvic cellulitis outside of the puerperal state. Still, I think it is more common at that time than Dr. Noble would seem to believe, for I am sure that I see a number of cases every year, and my ward at Mount Sinai Hospital is scarcely ever free from one or more patients suffering from undoubted post-parturient pelvic cellulitis or abscess.

Reference to my articles quoted above will confirm my statements as to these figures.

Finally, I maintain that, with the exception of the puerperal etiology, a ripe experience of fourteen years since I published my first paper in 1880, has only served to confirm the views on this subject which I then held, a part of which is that local irritation (by large pessaries, cauterization of the cervical cavity, violent coition with injury to the pelvic tissues) may produce an inflammation of, and exudation into, the pelvic cellular tissue entirely unconnected with the parturient act. I would add that I have seen several cases of pelvic cellulitis with suppuration during pregnancy, the cause of which I could not explain.

PAUL F. MUNDÉ.

²⁰ West 45th street, April 7th, 1894.

TRANSACTIONS OF THE CHICAGO GYNECOLOGICAL SOCIETY.

Meeting of February 16th, 1894.

The President, Fernand Henrotin, M.D., in the Chair.

Dr. Weller Van Hook read a paper on

ABSCESS FORMATION IN THE PATENT URACHUS.1

Dr. W. W. Jaggard said that Dr. Van Hook's excellent paper finally put to rest an ancient pun that had been perpetrated annually at the meetings of the Illinois State Medical Society. A distinguished ex-surgeon of the United States navy was accustomed, in his diatribes against the evils of specialism, to ask why no one had devoted himself to the diseases of the umbilicus. Dr. Van Hook evidently is the navel surgeon for whom our naval friend has searched so long.

He thought, 1, that Dr. Van Hook was in error in the etiological diagnosis of his case. The objective findings and the clinical course of the case pointed to an infected umbilical wound, and not to "abscess formation in a patent urachus." The photograph, also, shows a typical example of omphalitis—that is, of

inflammation of the navel with phlegmon.

2. The case is interesting and valuable, but it is unfortunately not "unique." Monti describes an example of a large abscess of the abdominal wall, without peritonitis, following on arteritis umbilicalis. In passing, it is worthy of note that, as pointed out by Runge, inflammation of the umbilical arteries is more frequent and oftener fatal than inflammation of the umbilical veins. Excellent accounts of this subject are to be found in Runge's "Krankheiten der ersten Lebenstage," 1893, and in

Baginski's "Lehrbuch der Kinderkrankheiten," 1892.

3. He wished to take advantage of the presence of Dr. Hektoen to refer to his account of a small umbilical tumor in a child, published in The American Journal of Obstetrics, September, 1893, page 340. Dr. Hektoen attributed this tumor to remains of the vitelline duct. This is also the construction placed upon such growths by Kolaczek, who places them in the group of enteroteratoms. Siegenbeck van Heukelom regards such intestinal ectopiæ as bits of intestine separated in the form of Meckel's diverticula. Dr. Jaggard was of the opinion that in some instances they were of allantoic origin.

¹ See original article, p. 624.

4. He said that Dr. Van Hook's case emphasized the necessity of strict antiseptic management of the navel from birth up to the time of complete cicatrization, sometimes a period of several weeks.

Dr. F. Byron Robinson.—I am much interested in Dr. Van Hook's paper and in his method of presenting the subject. The best idea of the urachus is obtained from examination of the pig and horse. I have examined the urachus in the horse, pig, dog, cow, sheep, and the human subject. The urachus is an important structure to the gynecologist. Tumors of the urachus, when encountered during laparatomy, are usually not diagnosed. The patency of the urachal duct may be tested by the sound, by examination of urine, or by the injection of fluid

through the navel or bladder.

I do not think that Dr. Van Hook has proved that this was a urachal cyst. I would rather consider it an ordinary abscess due to infection from the umbilious, or the remains of a Meckel's diverticulum, although the latter condition is very rare; I have examined particularly a hundred bodies, and have never yet seen one. The enlargement of the glands in the groin proves nothing; an infected toe might produce an abscess in the groin. I have seen four urachal cysts with Mr. Tait, one with a surgeon in Birmingham, and one or two with Jordan Lloyd, and, so far as I know, all agreed that they were tubercular. I did not examine them microscopically, but macroscopically they appeared tubercular. Those who have done much good work in this line agree that they are tubercular. Voutz found twenty-four cases of urachal cysts in forty-six bodies. I have been examining cadavers for urachal cysts for a long time, but I have not found any, except a few small dilatations of the urachal duct.

There are two kinds of urachal cysts: one is simply a spindleshaped dilatation of the urachus, which lies between the abdominal wall and the peritoneum, and on abdominal section is easy to deliver; the other cyst extends down into the pelvis and up to the navel, and no intestine except the descending colon can be seen. This is the cyst that troubles gynecologists. Mr. Tait has been a great epoch-maker in urachal cysts, which he discussed in 1885; Bantock then said: "We have such a limited experience with these cysts I am afraid no one can discuss the subject." Mr. Tait employed circular drainage, and every case I saw with him recovered; one was in a distinctly tubercular girl. Relative to diagnosis, there are no intestines below the navel, and the fluctuation will stop at that point. I have seen Mr. Tait, and also his assistant, Dr. Martin, diagnose these cases at once. I am very much pleased with the manner in which Dr. Van Hook has presented the histological part of this subject.

When the abdomen is opened and a gray, thick, gelatinous wall from one-fourth of an inch to an inch in thickness is encountered; when the peritoneum cannot be distinguished, and

when on opening into the cyst it is found to contain cheesy matter, on the removal of which the hand can be passed in various directions unobstructed, it may be suspected that a urachal cyst is present.

The walls of the simple variety are tough and leathery. It may or may not communicate with the bladder. It disturbs the peritoneum only by dissecting it off from the abdominal wall.

In the second variety of urachal cysts the sac wall dips down into the pelvis and closely covers the genital organs. The intestines rest on the top of the urachal wall. The cyst does not collapse after it is emptied. It should be drained by circular drainage—i.e., a rubber tube passed through the abdominal wall, and then pushed through the vaginal wall so as to establish through irrigation.

It is probable that the urachal cyst which dips down into the pelvis is congenital. Mr. Tait claims that the wall of such a urachal cyst acts as peritoneum, a proposition to which I cannot subscribe, because the germinal epithelium of the ovary would then be replaced by another kind of tissue—e.g., allantoic.

I believe that the urachal cysts that dip into the pelvis are developed in post-natal life, and that they gradually dissect away large portions of peritoneum from the anterior abdominal wall and the pelvis, so that the whole of the small intestine lies on top of the cyst. The cyst does not project much beyond the level of the umbilicus. In women who have borne children the relation between the ovary and fimbriæ of the Fallopian tube remains intact—i.e., the tubal mouth and germinal epithelium of the ovary are in their natural relation. I have seen the thick-walled urachal cyst tightly wrapped around the tube, uterus, and ovary.

The urachal cyst may lie dormant for an indefinite period, or

may at any time develop actively.

Dilatation of the urachus is analogous to the distention of other functionless ducts. Upon examination of a number of cadavers and animals, frequent dilatation of Gärtner's duct, the vertical tubes of the parovarium, and especially Kobelt's tubes, will be found. The most typical example of this is seen in the pig. The best analogy in the human subject to urachal dilatations is the parovarian dilatation or the distention of the mesonephritic tubules and ureter, or slight dilatation of the tubes of the Wolffian body. Branchial fistula is also an example of what evolution has taught man's post-natal life to cast off. Encysted hydrocele is another example of the dilatation of a functionless duct.

The mortality of urachal cysts, especially those which dip into the pelvis, was, until a few years ago, forty per cent. During the last four years I have seen five operations on urachal cysts and have examined two fine specimens removed by Dr. Henry T. Byford. All of these cases, so far as I know, recov-

ered, so that the mortality to-day is probably less than forty per cent. I think many urachal cysts have been operated upon

without being recognized as such.

Dr. Ludvig Hektoen.—I wish to say a word or two in reply to Dr. Jaggard's remarks concerning the little polypoid growths at the umbilicus which I described to this Society some time ago. I based the diagnosis of vitelline-duct remnants, in the instance reported, upon the facts that the tumor presented the characteristic structure of the small intestine, that it was lined with columnar epithelium and arranged in the manner characteristic of an everted piece of the small intestine. In my paper I referred to the fact that it was possible to have similar remnants from allantoic structures, and that one such case had been described. In that case, if I recollect rightly, urine trickled through the centre of the opening. If the allantoic remains present the same histological appearances as the vitelline-duct remnants at the navel, it will be impossible to make any definite distinction; but, as far as I know, they do not, and I would ask Dr. Jaggard to explain the histological appearances upon which he bases the evidence of allantoic remains in the cases he referred to.

Tubercular peritonitis may produce the same appearances as those referred to by Dr. Robinson and regarded by him as

urachal tuberculosis.

Dr. Weller Van Hook, in closing the discussion, said: It is objected that inflammation in the umbilical vessels has not been excluded. The strongest point with which to meet this objection to the diagnosis is that cystitis of a marked character was present. This could have occurred only with difficulty as a result of vascular inflammation, while we can easily see how the infection might have spread from the umbilicus downward, by continuity of tissue, to the bladder. This sequence is what I believe actually occurred.

It is to be regretted that the lining membrane of the abscess cavity was not examined microscopically, although it is probable that destructive changes would have masked the distinctive features of the epithelium, which at best are none too distinc-

tive.

The statement as to the examination with the probe was not understood by Dr. Robinson. The probe went downward for some distance, as stated in the paper; it could then be moved from side to side quite freely, indicating the lateral extent of the abscess.

Dr. Casey A. Wood reported a case of

PUERPERAL PANOPHTHALMITIS DUE TO SEPTIC EMBOLISM.

Dr. C. D. Wescott (present by invitation).—I am very glad to have heard this communication, and, as usual when Dr. Wood

speaks, he covers the subject well. I have never seen one of these dreadful cases in the parturient woman. We all, however, see too frequently panophthalmitis in septic cases. I have seen this disease in pyemia originating in the joint, in meningitis, and twice in cases of pneumonia. In one of these cases, which occurred in Cook County Hospital, I enucleated the sole remaining eye in a patient who was convalescent from pneumonia, and Dr. Hektoen and I tried to make some cultures in order to determine if the purulent choroiditis was due to the pneumo-

coccus, but the results were not satisfactory.

Many writers advise very strongly against enucleating these suppurating eyes. Some say that we may allow the pus to escape through the sloughing cornea, simply applying moist dressings and giving anodynes to relieve the patient's suffering; others say that we may incise these eyes as we do an abscess, and favor suppuration and evacuation of the eye contents by moist dressings. I have enucleated the eye in panophthalmitis in several cases without any disastrous results, but always with great relief to the patient. We all know, however, that enucleation of a suppurating eye has been followed by septic meningitis and death.

Dr. Jaggard said: 1. The clinical history of Dr. Wood's case is so incomplete that the propriety of its discussion is ques-

tionable.

2. The title of the paper, "A Case of Ophthalmia due to Puerperal Septicemia," is a misnomer. The fact of puerperal septicemia in the case is not established, let alone any relation between the eye disease and the uterus. The eye symptoms were developed seventy-two hours after the advent of labor—that is, long before the usual time for the manifestation of septic infection of the genital tract. The habitual abortions and the dead, macerated fetus point to syphilis. The incrimination of the uterine sinuses and of embolism from the uterus is gratuitous assumption.

3. The paper is an anachronism. It is neither the language nor the method of modern ophthalmology to refer, in this loose

fashion, diseases of the eye to the uterus.

4. Dr. Wood says he is unable to find literature bearing on the topic of his paper. There is a good account of the relation of puerperal septic infection and diseases of the eye in the last edition of Von Winckel's "Lehrbuch der Geburtshülfe," now lying before him on the President's table. It is Prof. Von

Winckel's gift to the Society.

Dr. Casey A. Wood, in closing the discussion, said: I endeavored to throw as much light as possible upon the causation of this trouble, and was perhaps not very successful in obtaining information from the family physician of the patient. Still, it seems to me that the history of syphilis is pretty plain from the number of abortions and premature labors this woman had. I have noticed that syphilis is very much in evidence in these

cases of septic embolism, and I do not see, if we reject the embolic theory, how to explain the eye symptoms. As regards the treatment, I do not think it would be of any avail whatever; even if the patient should be seen upon the first day nothing can be done. I think there is only one reason why it would be of use to enucleate these eyes in the early stages of suppuration—that is, that it might throw some light upon the character of

the disease within the eye. Like my friend Dr. Wescott, I am not very much afraid of enucleating eyes that are the subject of suppurating panophthalmitis; I have done it in many instances where I thought it justifiable, and with no dreadful results following. Theoretically, of course, one would expect that cutting through the optic nerve and into the lymph spaces about it would promote septic absorption, and would be more likely, perhaps, to infect the other eye, assuming that there is trouble without the globe or in the orbital tissue. Now, as regards the assumption of Dr. Jaggard that ophthalmologists generally are prone to regard the nterus as pre-eminently an ocular fons et origo mali, I deny it, and do not think that the results of an investigation of the subject will justify such a statement. However that may be, I desire to enter an humble but emphatic protest against the allegation. I have always been very sceptical upon that point. Lately I read a German paper upon this subject, in which, to my mind, the writer showed conclusively that uterine affections and eye diseases, not commonly, but rarely, stand in the relation of cause and effect. It is true that very often one finds ocular troubles associated with diseases of the uterus. Sometimes they present a common cause; but outside of this relation—a relation existing between most of the organs of the body-there is nothing to show that the organs of reproduction are especially interested in ocular changes. That is my belief, and I have rarely had occasion to refer any of my eye cases to gynecologists.

Dr. C. S. Bacon presented a thesis entitled

THE ANTISEPTIC TREATMENT OF ENDOMETRITIS.1

Dr. Franklin H. Martin.—Dr. Bacon's paper is along the line of modern ideas, and is ingenious and full of suggestions. We are constantly called upon to treat cases of endometritis. Inflammation of the mucous membrane of the uterus should be treated on the same principles as any other inflammation—namely, by the removal of necrosed tissue and débris, the application of antiseptics, and drainage. My method is to explain the condition thoroughly to the patient and to advise thorough dilatation, curettement, and drainage. She is prepared as thoroughly as for any capital vaginal operation on the uterus. I dilate the uterus, and gently curette the entire mucous mem-

¹ See original article, p. 610.

brane of the uterus with a medium curette, neither sharp nor dull, until I reach healthy underlying tissue. The necrosed tissue, the result of inflammation, and the purulent matter should be thoroughly removed. I then make an application of chloride of zinc and carbolic acid, each ten per cent, and pack the cavity loosely with iodoform gauze. If the patient is not prepared to go to a hospital to have an operation and get well immediately, provided she does not require an operation to restore a laceration of the peritoneum or cervix, I advise the use of galvanism. I would not use this powerful remedy in a haphazard way, but in a definite manner.

The current should be of sufficient strength (a) to produce a strong acid reaction; (b) to produce coagulation; (c) for antisepsis; (d) to act as a sedative. The electrode should accurately fill the uterine cavity, and a current of twenty-five milampères for each square centimetre of the electrode administered. A current of this strength will not produce cauterization or necrosis. The current is a powerful general tonic and is trophic in action. This treatment, carried out three times a week, together with regulation of the bowels, general tonics, stimulating vaginal douches, etc., will eventually cure endometritis.

Dr. Jaggard said: Dr. Bacon's carefully prepared essay deserves a more dignified fate than to be "damned with faint praise." His remarks, he hoped, would not be construed as a harsh criticism, but as evidence of attention to the paper and of

interest in the author.

1. Dr. Bacon does not define his subject. Endometritis may be tuberculous, syphilitic, actinomycotic, septic, gonorrheal, and the like. Further, a profuse intermenstrual secretion from the uterus is not necessarily of inflammatory origin. Presumably Dr. Bacon limits his topic to gonorrheal and septic endometritis. But even with this limitation there are such varieties as glandular, interstitial, and mixed, and the like.

2. The universal proposition, "every case of endometritis is of microbic origin," cannot be accepted to-day. There is a process in the body, often called "reactive inflammation," that

occurs in sterile tissues.

3. The hypothesis of a "menstrual decidua" is no longer tenable. The weight of evidence is in favor of a relatively intact endometrium during the flow, at least so far as concerns the

columnar ciliated epithelium.

4. In septic and gonorrheal infections of the female genital tract the state of the endometrium is usually not the controlling element in the clinical picture. When these cases are first seen the Fallopian tubes, ovaries, pelvic peritoneum, and connective tissue, as a rule, dominate the situation. Dr. Bacon treats endometritis as a distinct morbid entity, when it is only a part, and often the least part, of the disease process.

5. As specific items in prophylaxis and treatment Dr. Jag-

gard mentioned the necessity of proscribing sexual intercourse during treatment, of regarding latent gonorrhea in the male as an absolute contra-indication to marriage, of the prohibition of the vaginal douche in normal puerperia. Doléris' écouvillons are dangerous instruments, because they cannot be sterilized. Bandl's canulæ are valuable in the treatment of certain cases of cervical endometritis.

6. It is gratifying to observe that neither the essayist nor any speaker has referred to Emmet's operation for the repair of the lacerated infravaginal portion of the cervix in the treatment of endometritis. This omission is either a strange oversight or Noeggerath's crusade against this criminally abused operation is beginning to influence the responsible men of the

profession.

Dr. T. J. Watkins.—I am very glad that Dr. Bacon has laid so much stress upon careful preparation of the vagina before exploring the uterus. This recalls to my mind the advice given me, after I left the New York State Woman's Hospital, by a country practitioner, a recent graduate, who said: "In treating gynecological cases never use a speculum, for if you do leucorrhea will always result." Undoubtedly whenever he used a speculum he passed a sound into the uterus.

In the selection of the speculum for intra-uterine treatment I think the Sims speculum has a great many advantages, as it does not limit the mobility of the uterus, but allows it to be dragged down, whereby the canal is straightened and less force

is necessary to enter the uterus.

I think the curette is a dangerous and inefficient instrument in the treatment of puerperal endometritis. One works blindly with the curette in the removal of retained portions of the placenta or membranes from the uterus. It is often impossible to tell by the use of the curette when the uterus is entirely clean, and it is impossible to avoid injury and possibly perforation of the uterus. In such cases the placenta forceps is perfectly sat-

isfactory.

I believe the uterine cavity can be as thoroughly cleansed with the swab as by irrigation, and with less danger. Many patients are treated for endometritis where the uterine discharge is simply a symptom of obstruction to the pelvic circulation. I believe there is danger of applying iodoform gauze for drainage so that it acts as a plug; but when it completely fills the uterine cavity, and is not packed solidly in the cervical canal, it is an excellent drain. If, however, the uterus has been thoroughly cleansed there is usually no need of drainage, provided the cervical canal does not become obstructed by contraction or flexure.

Massage in endometritis must be harmful rather than beneficial. It tends to increase the absorption from the uterine canal rather than to eliminate septic material from the uterine walls.

I have used galvanism extensively in the treatment of endome-

tritis, and have always been disappointed in the results.

"Emmet's operation for the repair of the lacerated infravaginal portion of the cervix in the treatment of endometritis" must be of very recent date, as no mention of it has yet appeared in the literature.

Dr. F. Byron Robinson.—In my opinion a gauze tampon is a poor drain for the uterus. I think I have seen infection and death follow its use. Only a few days ago I packed the uterus with gauze for hemorrhage; when I took it out the next day there was about a half-pint of fluid within the uterine eavity. I prefer a small rubber tube to gauze for uterine drainage. I do not approve of the office treatment of endometritis, except it be the application of electricity, which has in my experience been followed by good results.

My observation has been that when endometritis occurs other conditions coexist which require attention. Abortion is more serious than labor, on account of poor drainage; and with poor drainage the danger of infection of the tubes and ovaries is

increased.

I believe that gonorrhea in the female is not less easy to abort than in the male. This opinion is in accord with that of the best

authorities on this subject.

Dr. Henry P. Newnan.—I was much pleased with the paper and also with the remarks following it, but agree with them to a certain extent only. I think prophylaxis in endometritis may be extended considerably, particularly if we consider those cases that are not of recognizable septic origin. In treating endometritis, certainly a distinction ought to be made between septic and aseptic cases. Dr. Bacon, as I understand, only recognizes septic cases. Septic endometritis ought certainly to be treated upon surgical principles—that is, we ought to get rid of the infection, doing so in a thorough manner and at once; not using palliative means or "playing with the disease," as is frequently done even in the surgical and electrical treatment of the present day

I am not particularly enthusiastic over electricity as it is frequently used in endometritis. I believe that it can do an infinite amount of mischief. In a few of my cases which had been previously treated with electricity, the disease had been aggravated by the injudicious use of the intra-uterine electrode.

The curette and the tampon are frequently used in a careless manner. Too often the treatment ends with the introduction of

the gauze tampon after the curettement.

These cases ought to be followed up, as other surgical cases are, with systematic attention to the wound. The débris is not all removed by the curette and may not remain aseptic. Even if gauze is used as drainage, the uterus should be washed out subsequently and the canal kept open. This can be done only by

free dilatation. Dilatation should be done with an instrument that can completely paralyze the circular muscular fibres around the internal as well as external cervical orifice, so that we can feel sure that in a short time after the dilatation it does not again contract and close the canal. The use of the sponge tent in the treatment of endometritis is properly becoming obsolete. Subsequent douching should be used in the uterine cavity to free it from accumulations and infection. I believe, therefore, that the present mode of treatment of endometritis is in many instances rendered useless, and sometimes even harmful, by extending the inflammation to the connective tissue or tubes, on account of improper management by surgery and electricity.

Dr. C. S. Bacon, in closing the discussion, said: I cannot adequately reply to all the criticisms that have been made in the time allotted to me. I was obliged to cover so many points in such a brief way in my paper that some misunderstanding natu-

rally arose.

Instead of extending the definition of endometritis to include all cases of vascular disturbances, I attempted in the paper to embrace all these states among the conditions which predispose to infection; among these are uterine displacements and tumors. I think we have no right to assume that a discharge coming from the uterus that contains a fibroid tumor is from any other source than an infected endometrium. Uterine displacements simply predispose to the disease. We know nothing of the normal secretion of the endometrium. Unless a discharge can be proved to occur without the presence of infective bacteria, it is much more reasonable to assume that all have the same cause. I hardly see why there is any more danger in looking upon endometritis as an entity than in looking upon any other inflammatory state as an entity. We speak of inflammation of the peritoneum or of the lungs as a disease. So we treat inflammation of the endometrium in the same way; it is not a symptom, it is a disease, as we understand disease.

Minot is my authority for the assumption of the existence of the menstrual decidua. I understand that the epithelial layer of the endometrium is normally removed with a thin layer of the stroma; not the entire endometrium, according to the old theory of Williams, but simply the chief part of the epithelial

layer.

Examination of the vaginal secretions is the way to determine the presence of infective bacteria; this is certainly a more sensible method than examining the husband. If the vaginal secretion is of the normal acid reaction we are certain that no septic organisms are present. The use of litmus paper will enable us to determine the probable danger of an infected endometrium in the case of a pregnant woman.

In regard to the écouvillon, it is not to be expected that the same instrument shall be used repeatedly. The swab to be

attached to the dental engine should be changed with each application

The importance of drainage is generally recognized, and the thing I wished to call attention to was the superior value of wicking and its well-proven advantage for drainage, not only in the uterus, but in all cavities. I did not know that any one nowadays used the rubber tube for uterine drainage.

I was glad to have the support of the President in defending the position that it is possible to abort a gonorrhea—that is, in the sense of checking its progress and preventing its exten-

sion to the tubes.

Only the mild cases which are benefited by stimulant appli-

cations or electricity should be treated in the office.

I am very much obliged for the interesting discussion that the paper has elicited.

TRANSACTIONS OF THE NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, February 22d, 1894.
Malcolm McLean, M.D., Chairman.

Dr. Paul F. Mundé read a paper entitled

CLINICAL CONTRIBUTIONS TO ABDOMINAL SURGERY.1

THE CHAIRMAN remarked, regarding failure to find the fetus in certain cases of ectopic pregnancy, that the envelopes were believed to develop more rapidly in the tube than the embryo, and that they might go on increasing even after death of the latter, a fact which had been offered as an objection to treatment with electricity.

Dr. Mundé said he had formerly been of the opinion that ectopic pregnancy was not always the cause of intraligamentous effusions of blood, but he was becoming somewhat doubtful on

that point.

MODIFIED FRITSCH IRRIGATION TUBE.

Dr. A. H. Goelet presented a modified Fritsch tube for irrigating the uterus and cavities. It differed from the original in being longer and having an opening at the end. Thus it would reach the bottom of the uterus or abseess cavity when unusually

¹ See original article, p. 593.

deep, and, the flow of water being out of the end of the tube instead of a side fenestrum, it would go beyond a constriction should the tube fail to pass this.

MODIFIED UTERINE DILATOR.

Dr. Goelet also exhibited a modified Sims dilator, the main feature of which was that it locked itself at every degree of dilatation.

TRUE KNOT IN UMBILICAL CORD.

Dr. S. Marx presented an umbilical cord, forty-one inches long, which contained a true knot, the first he had seen. It was from a case to which he was called after the physician had temporized for some time. The cord was prolapsed and would not remain reduced, the death of the child seemed imminent, therefore Dr. Marx performed accouchement forcé, bringing forth the child within ten minutes, but it was still-born. The mother had passed through several labors, all having been complicated.

UNCOMPLICATED OVARIOTOMY; DEATH FROM SEPSIS OF UNKNOWN ORIGIN.

Dr. Mundé related a case of laparatomy for removal of a simple multilocular ovarian tumor the size of a child's head, the operation a simple one, no adhesions encountered, time not more than twenty-five minutes, yet for some unaccountable reason the woman got up an intense acute septic peritonitis and died about the second day. All antiseptic and aseptic precautions had been taken, and inquiry failed to reveal any source of infection. Within twenty-four hours after the operation the temperature had risen to 103°, the pulse to 150, the mind was perturbed. He therefore reopened the abdomen and found evidences of intense acute peritonitis, unquestionably septic in nature. The abdomen was washed out, but the case pursued its fatal course. Nothing was found at the autopsy to indicate the source of infection. The speaker referred to a similar case which had occurred in the practice of Dr. Thomas.

Dr. Goelet mentioned a case of Cesarean section in which the patient died without apparent cause, unless from obscure shock.

NOTES ON PRURITUS DURING PREGNANCY AND THE PUERPERIUM.

DR. H. C. Coe sent a brief paper on this subject, which was read by the Secretary, Dr. Jarman. Of the many minor troubles from which women suffered during pregnancy and the puerperium, few were more distressing than local pruritus. Physicians were apt to underrate such minor troubles, and dismiss the patient with the cold comfort that this was one of the annoyances of pregnancy which must be patiently endured, as it

would come to an end in the course of time; or else they prescribed a common ointment and made no effort to discover the cause of the trouble.

We were driven to the conclusion, the author thought, that even local priritus was mainly a dermato-neurosis dependent upon the general nervous condition. One of his patients, eight months pregnant, had pruritus of the external genitals, which had been attributed to a discharge from the cervix, but douching and other local treatment did no good until the general nutrition had been improved. Concentrated, irritating urine might cause pruritus, but it had sometimes been given the credit when the state of the general nervous system was the real cause. This was illustrated in a case in which the urine was of high specific gravity, acid; one day only ten ounces were passed, but it contained no albumin or casts, nor were there other symptoms pointing to an organic lesion. Increasing the quantity of urine and local applications failed to give relief; exacerbations of the pruritus continued until after delivery, and then disappeared. It was clearly a case of general neurosis depending directly upon pregnancy, and therefore treatment had been without avail.

Puerperal dermatitis was almost always of the form of acute urticaria. A case of this kind was that of a woman who after delivery got up an urticaria with some fever, there being no apparent cause. In a few days the patient was as well as ever, and he was disposed to regard the urticaria as due to some error in diet, until he learned that it had appeared the next morning after an occasion of great excitement. In another case there was almost complete suppression of the lochia, which, however, had no bad odor. He irrigated the uterus and the flow reappeared. Two days later the temperature rose to 102°; the patient had an eruption, supposed to be measles, but it proved to be urticaria. The fever and eruption gradually declined after forty-eight hours. Septic trouble was excluded, and no cause for the symptoms could be found except nervousness. The accompanying headache, nervousness, and reduction of the lochia in these cases of urticaria during the puerperium might lead one to suspect sepsis and cause alarm.

The prognosis during pregnancy was doubtful. As to treatment, where the general nervous system was at fault he thought one should avoid strong lotions locally, and drugs for internal use which tended only to further irritate the disturbed stomach. Locally one might apply carbolic acid in some form. Salicylic acid, which had been recommended by French writers for internal use, had not given Dr. Coe satisfaction. The kidneys and bowels should be kept regular, nervousness allayed, cooling

lotions applied during the puerperium, diet regulated.

Dr. Marx had been early impressed with the necessity for paying due attention to such minor complications of pregnancy

as pruritus vulvæ by the fact that he had lost one of his first cases on entering private practice because of his inability to cure the pregnant woman of this annoying affection. The trouble was not always local. Glycosuria had long been recognized as a cause. In some women the pruritus antedated the pregnancy. Where parasites were a cause the appropriate treatment was not far to seek. He had seen several cases of pruritus from true neurosis permanently relieved by the constant current, the negative pole being placed over the affected portion. He mentioned one case in which a perineal abscess was the cause, and he thought it not unlikely that there was some systemic or local infection in cases attended by some fever and scanty or suppressed lochia.

DR. HERMAN L. COLLYER thought a number of cases of pruritus resulted from ulceration of the external os, and some from little patches of ulcerated tissue around the vagina. Regarding applications of nitrate of silver, he had seen these used so strong as to set up sufficient pain almost to cause abortion. Peroxide of hydrogen was useful. Pruritus vulvæ after labor could usually be traced to sepsis. The discharge need not necessarily have an odor in sepsis. Where the discharge was irritating enough to cause pruritus he thought it of sufficient consequence

to wash out the uterus with an antiseptic solution.

THE CHAIRMAN had observed in the worst cases of pruritus a thick secretion, looking like boiled rice, in the folds of the vagina, which he thought was the source of irritation.

Dr. Goeler had obtained the best results from a douche of Thiersch's solution and dusting the parts with powdered boracic acid.

Stated Meeting, March 29th, 1894. MALCOLM McLean, M.D., Chairman.

INSTRUMENTS FOR USE IN ANTERIOR VAGINAL FIXATION OF THE UTERUS.

Dr. H. N. Vineberg presented a knife, the cutting edge strongly convex, for use in anterior vaginal fixation of the uterus—an operation which he had performed nine times. He also presented a long uterine sound with a bulbous end to avoid possibility of injuring the walls in anteverting the uterus.

Dr. H. T. Hanks, in presenting a

MODIFIED HAGEDORN NEEDLE,

said the objection to the one with a full curve was that it could be used only with the Hagedorn needle holder, which often was not at hand. The needle presented had a straight middle portion and could be grasped by any ordinary needle holder, and yet was suitable for operations within the vagina, as in ligating the uterine artery, etc.

Dr. Hanks also presented a

TROCAR AND CANULA

adapted not only for puncturing ordinary ovarian cysts, etc., but also for passing a gauze drain down from the abdomen into the vagina. The trocar could be pushed down from above into the funnel-like opening of a canula pressed up against the vaginal vault. The canula covering the trocar, and introduced with it, had a number of fenestra and permitted of free through irrigation. After this was done gauze was pushed down through the trocar, the latter was withdrawn, and the gauze allowed to remain. When withdrawn it was best to pull it through a little at a time.

Dr. Mundé said he had employed through vaginal drainage in cases of deep pelvic abscesses, and had found it the only way to cure certain cases, but he used the soft-rubber drainage tube. He thought gauze would not drain sufficiently, and that it could not be left in long enough without changing.

Dr. HANKS said the gauze could be left in seven to nine days,

if drawn out a little each day.

Dr. Paul F. Mundé read a paper upon

ABSCESS OF THE OVARY.

He said it was only since the progress made by abdominal surgery during the past fifteen years that abscess of the ovary had been recognized as not an uncommon condition. Puerperal abscess of the ovary, however, had been mentioned in the older text books and was recognized as a very dangerous condition, generally ending in the death of the patient from peritonitis.

He was unable to say just how frequently ovarian abscess occurred, but among his records of abdominal section he had found sixteen cases. Out of the sixteen women only five had borne children or aborted. The frequency of non-puerperal abscess of the ovary could be inferred from these figures. There was no reason why the ovary should not become inflamed or destroyed by abscess, any more than the tonsil or other highly vascularized organ. Many conditions must necessarily engorge the ovary with blood and thus encourage inflammatory results. Parenthetically, Dr. Mundé said he must confess belief in pelvic congestion caused by cold, particularly at susceptible periods. Let this stimulus be repeated a number of times and at intervals insufficiently long for the organ to return to its normal vascular state, and a local inflammation with adhesions would be brought about and in time the organ would break down.

The woman might not be seriously ill, she might be able to be about, but was scarcely ever free from pelvic pain, which was increased at intervals, chiefly by exertion and at the menstrual epoch; at these times there might be slight chills and moderate rise of temperature. If the abscess of the ovary followed puerperal inflammation of the pelvic organs, the course would be much more rapid and active surgical interference would be called for. It was in these acute cases that perforation took place. In other cases the patients were more or less chronic invalids. Still there was no special alarm. Systemic infection was limited by the comparatively slight absorbent power of the walls of the abscess.

Regarding diagnosis, Dr. Mundé said that it had been the custom, since Mr. Tait had called attention to pyosalpinx, to regard all cases of pus in the pelvis as belonging to that disease. he did not deny that pyosalpinx was much more common than abscess of the ovary, yet his experience had shown that the latter condition was not very rare. When pyosalpinx was alone its diagnosis was not very difficult; the peculiarly elongated and dilated tube readily distinguished it from the ovary. When abscess of the ovary alone existed there was a round, elastic tumor, similar in shape to that of an orange, and easily distinguishable from the tube. When abscess of the ovary and pyosalpinx existed together the diagnosis might be difficult or impossible. There was likely to be a mass of irregular outline produced by the distended tube curled about and attached to the ovarian sac. But when once pus existed it was immaterial in which of the two organs it was located, as removal was indicated in either case. It was absurd to remove one without the other, as one alone would be useless. Of course not every collection of pus in the pelvic cavity was ovarian or tubal, but if it were not its outline would be found indistinct and unlike that of tubal or ovarian collection of pus.

With regard to prognosis, abscess of the ovary was very much like abscess in any other part of the body. The pus was apt in the course of time to find its way out in the direction in which there was the least resistance, although it might require months or years for this to happen. In a few instances the pus became cheesy and remained. In abscess of the tube there was more

danger of rupture.

The causes were chiefly inflammation coming from without, spreading through the tubes, and usually affecting both appendages more or less. In six of his sixteen cases the left ovary alone contained the abscess; in two the right, in eight both ovaries had undergone suppuration.

Complications consisted of adhesions to adjacent parts, perforation into the gut, bladder, vagina, or open peritoneal cavity. If an opening should take place into the bowel low down, so that there could be free drainage, spontaneous cure might result:

but if the opening were in the upper margin of the sac fecal

matter might enter it and increase the dangers.

Treatment should consist usually in opening the abdominal cavity, enucleating the abscess sac, and removing the corresponding tube along with the ovary. Adhesions might render the operation difficult and dangerous. Usually, however, one could peel out the sac without injury to the intestine or neighboring organs. Cleanse with Thiersch's solution, introduce iodoform gauze loosely, bring it out at the lower angle of the abdominal wound. Trendelenburg's posture was employed, but not during flushing of the abdomen. Regarding the danger of the

operation, only one of his sixteen patients died.

In a certain number of cases of abscess of the ovary he thought extirpation was not necessary. He referred to cases of long standing, in which a dense mass of adhesions had formed and the pus was situated low near the vagina. Under these circumstances there was risk in opening the abdomen and attempting enucleation, and he would advise vaginal puncture and drainage. He recognized the objection which might be offered to this procedure—namely, that the abscess might not heal, at least not for a long time. Dr. Mundé supposed that in the past he had thus drained some ovarian abscesses which he had regarded as due to "pelvic cellulitis." Where there was perforation into the bowel he would make counter-opening into the vagina, drain in that direction, and thus encourage the opening in the bowel to heal. The same rule applied to perforation into the bladder.

Dr. Hanks thought that while we could not take too much care in making the diagnosis of the existence of pus in the pelvie cavity, it was not so important to say whether it was in the ovary or in the tube. In either case an operation would be called for, and both organs should be removed when it was necessary to excise one. It was less difficult to make out pus in one or both organs than to differentiate between ovarian abscess and hypertrophy of that organ. In abscess low in the pelvis, other things being equal, he preferred to drain through the vagina instead of through the abdominal opening. He agreed with the author that some of these patients went about for a long time without apparent great danger, but one could not say how soon perforation might take place or an acute condition arise which would greatly endanger life. The contained pus, though small in quantity, seemed to be highly virulent; for in one case operated upon by him contamination of the cavity with but a very small amount caused death from sepsis in twenty hours after the operation, and in the case of another surgeon the patient died within thirty hours.

Dr. A. F. Currier thought the author had done well in giving warning not to attempt too much where all the pelvic organs were fused together, and advised puncture and drainage through

the vagina when fluctuation was felt near the vault. Yet Dr. Currier's experience had been that patients were seldom cured in that way. Regarding cleansing the cavity during the operation of laparatomy, he thought that ordinarily it was better to use the dry gauze sponge instead of resorting to irrigation, since by the latter method there was danger of widely spreading the virulent elements. While gauze drainage could be properly highly praised in some regards, yet it was painful to remove after three or four days, and he therefore first gave a few whiffs of chloroform. Moreover, he thought it was more likely to result in a sinus than if a tube of small calibre were used.

Dr. Egbert H. Grandin was glad to avail himself of the opportunity again to emphasize preference for the vaginal route in drainage in a certain proportion of cases of pelvic abscess. Notwithstanding the condemnation which this method had received, and was still receiving from some, he was satisfied of its superiority in a certain proportion of pelvic abscesses, whether connected with the ovary, tube, or other tissue, provided it were situated low. The aspirator was used as a guide, the opening was enlarged with the bistoury, it could be still further dilated, the finger could then be introduced and with it break up the pockets of pus, wash out, drain, and thus very favorable chances of cure would be given. If, however, the walls continued to discharge pus and the tract would not heal, there would then be time to open the abdomen and enucleate the offending mass, and in doing so there would not be the danger of infecting the

abdominal cavity which attended primary laparatomy.

Dr. A. P. Dudley thought the time was approaching when every surgeon would make conservatism rather than radicalism his motto. If the after-histories of patients could be obtained he believed surgeons would regret many of their operations. A number of his patients whose appendages he had removed had returned three, four, or five years afterward, expressing regret that the operation had been performed, for the reason that hot flashes had either not ceased or had come on. In this line the paper of Dr. Goodell, of Philadelphia, had proven a valuable lesson. Therefore he believed that if patients could be relieved of their pus by any conservative method it was better than extirpation of the appendages, since loss of the latter might lead to development or continuance of subjective symptoms, such as hot flashes. Dr. Dudley differed strongly from Dr. Currier with regard to sponging out of pus in the abdominal cavity, for such a step meant certain inoculation by the rubbing process. He never allowed himself to touch pus in the abdomen with dry sponge or anything hard. Use irrigation, floating the pus out, not carrying it in. The hot water also relieved the shock of the operation. If the case were one of abscess which called for abdominal section, it also called for drainage, and this he now carried through the cul-de-sac into the vagina, never

through the abdominal wound. Gauze was employed. Vaginal hernia had not followed.

Dr. Jarman made two statements and offered a query. The great majority of cases of ovarian abscess seemed to occur on the left side; in all cases which he had observed where the abscess was of any size there was a distinctly feculent odor. This had not been observed in pyosalpinx. Was it not possible, therefore, that the feculent odor was due to juxtaposition of the

ovary to the rectum?

Dr. Mundé closed the discussion. He felt that free drainage through the vagina would be the better plan, for pus would not run up-hill more than would water. Regarding the virulence of the pus in ovarian abscesses, it did not seem to be great, for in none of his sixteen cases had he succeeded in removing the sac without rupturing it, yet only one patient had died. He agreed with Dr. Dudley in the use of water to cleanse the abdominal cavity, and in condemning the rubbing out of pus because of inoculation of the peritoneum on which it lay. Removal of the gauze drain caused pain only when done too soon.

Dr. S. Marx read a paper entitled

FURTHER STUDY OF OCCIPITO-POSTERIOR POSITIONS.

It was based upon two years' further experience. He had found the occipito-posterior position to occur somewhat more frequently than he had formerly supposed. It was doubtless overlooked at times, especially by those not accustomed to make careful examination of their cases. Indeed, it was seldom recognized by the general practitioner until there had been such interference with normal labor as required the calling of assistance. Abdominal palpation had been of little value to Dr. Marx in making the diagnosis. It should be a cardinal rule never to apply forceps until the position had been made out. In one case the forceps had been introduced twenty-three times before he was called and recognized the occipito-posterior position, turned, and easily delivered.

The treatment was divided into rotation or version, management after the head had engaged at the brim, was fixed in the basin, or was at the outlet. Rotation, and thus causing the head to engage in the anterior or oblique position, had not succeeded in his hands. He preferred complete version, which when done early was easy, and was just as easy after the waters had escaped and the uterus was hugging the fetus as was manual correction of the head. After the head had engaged at the brim, which the author spoke of as the high forceps position, his experience with the Tarnier forceps minus the perineal curve had been satisfactory. He would also try rotation with the forceps after the head had reached the basin. When delivery was impossible the only course was perforation of the head, or symination of the head, or syminatic production in the same production of the head, or syminatic production in the head, or syminatic production in the head of the head, or syminatic production in the head of the head, or syminatic production in the head of the head, or syminatic production in the head of the head, or syminatic production in the head had reached the head, or syminatic production in the head had reached the head, or syminatic production in the head had reached the head had reached the head had reached the head.

physiotomy as done lately by Dr. Murray. As long, however, as the maternal mortality from symphysiotomy remained what it was to-day few persons would allow resort to this measure.

Dr. Egbert H. Grandin was requested to open the discussion. He said he would approach the subject in the spirit with which he did about a year ago when he read a paper with a somewhat similar title—with a spirit of suggestion, not one of dogmatism. He was in sympathy with what the reader had said with regard to the diagnosis of occipito-posterior positions, that it was usually not made until the abnormal behavior of the labor called attention to something wrong. When the woman was troubled with continued short, nagging pains, and the head refused to engage, one should certainly think of occipito-posterior position at the brim, and should then resort to a measure which he had, contrary to the experience of the reader, not found to fail. He referred to rotating the head, together with the body of the child, from the posterior into the anterior position, and holding it there until it became fixed by a uterine pain. The want of success attending this maneuvre by many was due, doubtless, to turning only the head, or failing to hold the head and body in the corrected position until the uterus contracted and engaged the head in the brim. If there were disproportion between the head and pelvis, so that version became necessary, it could be resorted to while the hand was still in the parturient canal. Thus Dr. Grandin preferred rotation of head and body to complete version, and the latter to high forceps. By high forceps he meant their application while the head was still movable above the brim, medium forceps being the term applied when the head was engaged in the brim, although the author had spoken of the latter as high forceps. It was only where version could not be performed that he would resort to forceps. According to his experience it was only when the head was under size that it turned during the further progress of labor.

Dr. A. F. Currier related two cases of occipito-posterior position in which the course of the labor made the diagnosis.

Dr. Tucker said, with regard to the possibility of making a diagnosis, that his experience had been limited to one hundred and fifty cases of occipito-posterior position, and he had not yet failed after acquiring skill or after his first thirty cases. One could feel the fontanelles, face, ear, etc. He did not see the need of rectification of the head above the brim, for nearly always it entered the transverse or oblique position on settling down into the pelvis. Of course after the head had already entered the bony pelvis rotation was impossible by hand, and forceps had to be used.

Dr. Herman Collyer thought an experience with one hundred and fifty cases of occipito-posterior position an unusually large one, since, if he remembered correctly, statistics gave not

more than one in fifty confinements. He agreed with the author that it was not very easy to diagnose this position, and that ordinarily it was not done until the unusual behavior of the case led one to suspect it. There were many positions made out as posterior at the brim which, if the case were let alone, would become right or left occipito-posterior. He would prefer to re-

sort to version rather than to high forceps.

Dr. Brooks H. Wells said his experience with regard to diagnosis coincided with that of Dr. Tucker, that the occipito-posterior position could always be determined by careful, systematic abdominal and vaginal palpation. If the case was seen early, while the head was still movable, he preferred to rotate the child, as just described by Dr. Grandin; if the head was already wedged into the pelvis in an oblique diameter he would try to increase flexion, but would not apply forceps unless urgently indicated, as spontaneous rotation to an anterior position so often occurred as the head descended. With the occiput directly posterior, however, prompt interference was always required.

DR. G. W. Jarman testified to the success of the method described by Dr. Grandin. Within a year he had seen three cases of occipito-posterior position which he corrected by rotation of the head and body anteriorly and maintaining them in that position until fixed by uterine contractions. He had not been called to a case at the City Maternity by the house staff for three months on account of occipito-posterior position above the brim, as the staff always succeeded without aid in correcting the posi-

tion by rotating with the hand.

The Chairman (Dr. McLean) said that a few years ago he had made the statement that no teacher of obstetrics could positively diagnose the occipito-posterior position in all cases by simple vaginal examination, and the statement passed unchallenged. By abdominal and vaginal palpation, with the history of the case, the diagnosis could be made. If the ear could be felt, as he had found it possible to do, this alone would tell the position of the occiput. Regarding management, Dr. Grandin had expressed his views precisely, the important point being to rotate the head and hold it in the corrected position until fixed by a pain. He thought Dr. Tucker had misunderstood the question, for it related to cases of occipito-posterior position causing trouble, and there, of course, interference was indicated.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI.

Meeting of February 8th, 1894.

The President, WM. H. TAYLOR, M.D., in the Chair.

Dr. A. W. Johnstone read a paper entitled

WHY IS A SUCCESSFUL LAPARATOMY SOMETIMES A FAILURE?

My answer is, because we do not follow up our cases closely enough, or are not careful enough in our original diagnosis. The wholesale removal of ovaries which our country saw some five years ago I am now happy to say has almost passed, and a more careful overhauling of the case is now the rule rather than the exception, and my experience is that it is very seldom now that an unnecessary laparatomy is done. Our greatest shortcoming at the present time is in not following up our cases after laparatomy is over. In my experience, in about ten per cent of our cases the laparatomy is only the first step toward the cure of a case. Given a successful laparatomy—that is, that the patient has recovered from the operation and is out of the bed—if we fail to produce the menopause she is little better off than she was before the operation. The Stephenson wave returns in its full force every twenty-eight days, the nervous reflexes are in no way abated, and the indigestion and gaseous formations are, if anything, exaggerated. The reason for the failure to produce the menopause is twofold: first, because of conditions in the uterus itself; second, from failure to destroy the whole nervous plexus embedded in the broad ligament on either side of the uterus.

The uterine causes are of two kinds. First, when polypi in the interior of the uterus have been overlooked and cause recurring hemorrhages. Removal of these succeeds very frequently in curing the case. Next, a chronic metritis. In a case where we have had pyosalpinx or hydrosalpinx, which has been removed by the laparatomy, the patient's menopause may or may not have been brought on, but the infection continuing and the uterus not undergoing secondary atrophy, all the nervous phenomena are kept going by the same old stimulant which existed there before the operation. In my experience not less than ten per cent of all laparatomies require attention to the endometrium after the laparatomy has been successfully done.

As for my second heading, that of the failure to isolate completely the uterus from its nerve supply, I am happy to say the percentages, taken from large numbers of cases, are very small. This subject we talked over pretty thoroughly at the November meeting of this body, and I have very little now to add on the subject. The discussion that night turned on the report of one case in which a member of this Society removed the appendages, from which I afterward had to remove a large piece of tube. The woman had the most marked reflexes from the uterus; so much so that she had once been lectured upon, as a typical case of ulcer of the stomach, before one of the classes of the city. These reflexes seem now to be entirely cured and the woman is apparently well, but it is too soon yet to tell whether the menopause has been produced or not. She has had one slight red discharge from the uterus in four months. As I stated at the last meeting, I now repeat, that it is my belief that the whole of the nervous plexus of the broad ligament should be included in the ligature, and that your guide in so doing is to be sure that you have removed every particle of the ovary, and of the tube up to the horn of the uterus, and then to so peel them out of the broad ligament as to leave a rounded button of the tissue over which it is impossible for your ligature to slip. Do not ever use a knife to cut away the broad ligament; and do not do it with one snip of the scissors, but do it piecemeal, and so round your button that an inverted cauliflower-shaped piece of broad ligament is left on the distal side of the ligature. If time permitted I would be glad to go further into the nervous origin of menstruation than the limits of this paper will allow; but you all know that it is my belief that the centre which presides over it lies somewhere in the spinal cord, and that it gets various reinforcements from the solar plexus and the ganglia lying in the broad ligament, until it reaches the endometrium through the path I have so often described.

But this I know, as the practical part of it, that, if the whole of this nervous tissue is thoroughly destroyed, the percentage of failures to bring on the menopause in all cases, save fibroids which go beyond the umbilious, is extremely small; my experience would place it at a fraction of one per cent. In speaking of fibroids, when we operate for the menopause, my views have in no way changed since our last discussion. I have never met a case of multiple fibroid which did not reach the umbilious that could not be cured by the removal of the appendages. experience embraces some twenty or thirty cases. I know some of my friends claim to have met them, and my experience may be unique, but I cannot help thinking they have been tempted to operate upon edematous fibroids, which we all know are nothing but lymphadenoma, over which nothing but excision has any control; not even the normal menopause seems to have any influence over them, for once started they unfailingly go on to the production of the cystic myoma, which you all know means death or excision.

So much, then, for cases in which the menopause has failed to be produced; and whenever we have a laparatomy which does not accomplish the desired end, we cannot expect much until it is brought about, and we must get down to work to find why it failed. The days of great generalizations in laparatomy are past, and, like the astronomers, our advances must be only in the more careful calculations of small angles and in the more diligent, careful study of each individual case; and if we have a case which still menstruates or has the Stephenson pressure return, it is our duty to hunt carefully for the cause and stop it, and not let the case get out of our hands until this end has been accomplished. It is true that in ninety per cent of laparatomies which are done for infections which came from the uterus, the laparatomy, which puts out the fire in a dangerous region, starves out the inflammation by the stopping of the return congestion of the Stephenson wave. But we must also remember, as I have already intimated, that there is still a residuum of ten per cent in which this inflammation persists. In other words, the chronic metritis which started the pyosalpinx, the ovarian abscess, or whatever it might be, is not cured by the laparatomy, even though the Stephenson wave has been stopped. My experience shows that these cases are almost entirely cured by a thorough curetting and tamponing, the methods of which you all understand. Pozzi claims that every case of inflamed appendages ought to have the uterus curetted within thirty days after laparatomy. I think this is entirely too high, for in my experience not more than one in ten requires it; but that tenth case needs it very badly, and if it is not done the patient will be in very little better condition than she was before you touched her. It is true her life will be saved, but as a fact or in society, as a human being, she would be a failure. I have not had to go so far as to do trachelorrhaphy in these cases, yet I would not be surprised at some time or other to be forced to it, but so far I have found a thorough curetting all that they need. During the last year I have had a unique experience in what the older authorities call vascular degeneration of the vagina, and have been intending to give a special paper on it; but, as several of these cases bear specially on the sexual relation in laparatomy, I cannot do better than to give a foreshadowing of that paper here. One of the most striking cases, in which I removed the appendages more than two years ago for an infection of the whole genital tract, recovered nicely from the laparatomy and I thought would soon be well. At the end of a year, however, she came back to me with a decided vaginitis and metritis, although she had menstruated but once after the operation. curetted and tamponed the uterus and sent her home, thinking that she would soon be as well as ever. Her metritis was

entirely relieved; there was a vaginitis still persisting, but I thought it was caused by the irritation of the discharges from above, and that their absence would soon allow the vagina to heal. This, however, was not the case. In the course of seven or eight months afterward she came back to me, almost desperate, with a well-marked case of vaginismus and a most decided vaginitis and vulvitis. It was a typical picture of what Tait describes, in his first work on "Diseases of Women," as vascular degeneration of the vagina. The little granulation plugs were standing up all over the surface, and the enlarged vessels were ramifying in the bases of the carunculæ myrtiformes and running around up to the edge of the urethra, and the whole thing looking as though the next step would be the formation of cicatricial tissue and permanent narrowing and contraction of the vagina. The condition reminded me exactly of that found with granulated lids. Little adenoid lumps were standing up in the same way, and sero-purulent fluid in small quantities was bathing the whole surface. In some places the epithelium was lost and the lightest touch produced a slight hemorrhage. In these abrasions the cicatrices start, and by their secondary contraction the great deformities which this disease is noted for are accomplished. Fortunately in this case, though, no deformity had occurred, although the slightest touch produced a typical vaginismus. The case had been treated with douches and ointments, ichthyol, and all the new-fashioned disinfectants, until the patient was thoroughly worn out. No results whatever had been produced, and the case was marching steadily on to what would ultimately have been a closure of the vagina. The sexual appetite had become entirely extinguished, as might have been supposed from the condition, and the patient showed both the mental and physical distress which always accompanies such conditions. Some months before, while watching the recovery of a slight stellate tear which did not seem to warrant a trachelorrhaphy, I was impressed with the similarity of the physical condition to that of the conjunctiva in trachoma, and was seriously tempted to use the old stand-by in that condition, the vellow oxide of mercury. But, as the patient's condition was such that a salivation would have been a sad catastrophe, I postponed its use until some other time. As soon as I saw this case, though, I determined to employ it at once. In the first case I would have had to use pencils of the yellow oxide placed up in the cervix, which you know is quite a good absorbing surface; but in the latter case it was the vagina and vulva, which you know is the most non-absorbing of all mucous membranes. So I determined to try a weak ointment of the yellow oxide of mercury. I began on eight grains to the ounce, but I found the irritation from its use was too great, and weakened it down one-half. Under this latter ointment the inflammation disappeared like a snow before a hot sun; the patient has gained flesh, and

from what I hear of her connubial relations everything is totally satisfactory. Now, after more than two years of persistent watching and care, the patient is as satisfactory a member of society as it is possible for a non-producing woman to be. This experience does not stand alone, but I have given it in extenso that you may see the persistent way that these cases have to be followed up, and how the inflammation has to be chased from one part of the genital tract to another and stubbornly fought until it has faded from the whole surface. Throughout this course the urine has to be carefully looked after, for a vagina once infected is very likely to involve the urethra, and urine that is at all irritating will encourage the persistence of the inflammation. I have just had a case of simple senile metritis which, after being thoroughly cured, was again infected with gonorrhea; after fighting that gonorrhea for more than a year I have at last succeeded in eradicating it from its last outpost, the urethra, with the yellow oxide of mercury. When you wish to reach it in the vagina alone, the ordinary ointment, such as is used in the conjunctiva, is all that is necessary; but where the inflammation seems to extend some distance up the urethra, follow it up with little suppositories of the yellow oxide and cocoa butter. Any druggist can roll them, and it is best to keep them on hand, made of varying sizes. They can be slipped into the urethra and held there until they have melted. The length of the suppositories can be measured by the distance up the urethra to the spot you wish to attack. I keep them on hand all the time, and I have been saved the necessity of removing carnneles by treating the granulated tissue from which these warts spring. I cannot help but think—that is, judging from my own experience—that the doleful stories we hear of the final results of laparatomy are a little overdrawn, not from the existing state of the patients, but from the failure of the operator to carefully follow up every case and be sure that the genito-urinary tract is rid of every vestige of irritation before the patient is allowed to get out of his reach. I have kept an eye upon disturbances of the connubial relation, and in my whole experience there has been but one serious break; in that case the woman had a bad vaginitis, which, I am sorry to say, I failed even to modify. It was some years ago before I thought of treating it as I would a thickened lid, and from my later experiences I cannot help but believe that, had it been treated as the case just detailed, the break in the family circle would have been avoided. A recent article by one of my old teachers, who is an extremely busy man and does not have time to follow up every case in all these so-called minor details, exaggerated the importance of the disturbances of the sexual relation. The percentage of healthy appetites in every direction would have been far greater had every case been subjected to the most rigid inspection and each and every vagina

and urethra left in its natural light pink condition. In our hurry to do the heavy surgery of laparatomy we are prone to neglect these so-called trifling things; but we must not forget that we are physicians as well as surgeons, and that we have not done our duty by any case until we have done all that is in our power, not only to save the life, but to restore the patient to her proper state in society. There are many things that can be learned from our friends the oculists and dermatologists, and there is nowhere that their knowledge is more practical than in the treatment and management of these infections of the genito-urinary tract. We must not neglect the rectum either, for I have known a triffing little fissure, even in so desperate a case as one that had undergone a laparatomy for extra-uterine pregnancy, to bring the whole family to such a point as to declare that the whole operation was a failure and that the woman was worse off than if she had never been touched. Five minutes under ether settled the whole affair and brought one more large family to thorough conversion for laparatomy.

As I have said before, the time for great generalizations is past; the framework of our specialty has been thoroughly built. During the rearing of this structure we have had our attention called too much to the gross mechanics of our work, and, like the astronomers who are now settling down to the drudgery of mapping the heavens and calculating the infinitely small angles, we too must settle down to what some people may call the "patchwork of a crazy-quilt," and bring into our work the knowledge that other specialties have developed; and I am sure, if we would spend more time in carefully studying each individual case for itself, removing here a little patch of granulation, curing there an infected spot, that we would make ourselves far more useful both to the community and to the state.

Dr. Reamy.—I have never failed to produce the menopause, except in cases where the operation was done for the arrest of fibroid tumors, where in some instances I have not been able to arrest the hemorrhages. But here we must distinguish between the hemorrhage associated with a myoma or fibroma and that of menstruation. Where I have removed the diseased appendages the menopause has been secured. I must also in this connection repeat an observation which I have elsewhere published—viz., that in my earlier work, when I was not so careful to place the ligature near to the uterus as in my present practice, the menopause was just as certainly secured in case all ovarian stroma was removed.

Dr. Johnstone.—In about what proportion have you succeeded

in arresting the growth of fibroids?

Dr. Reamy.—I have not removed the appendages for the arrest of the growth of the fibroids after they have attained a large size; I have confined my operations to cases which have not ascended above the umbilicus. That, however, is not a test

for the size of all, for sometimes they fill the entire pelvis from brim to brim and do not extend above the umbilicus. I should say that where the tumors have been small the growth has been arrested in about sixty per cent of the cases—that is, completely arrested and retrogression secured. In a few cases it has exerted no influence.

Dr. Zinke.—Have you any cases in which the tumor con-

tinued to grow after the removal of the ovaries?

Dr. Reamy.—Yes, I remember two cases in which the growth was more rapid after the operation.

Dr. Bonifield.—Was the tumor large in those cases?

Dr. Reamy.—Yes, in both cases above the size indicated in what I have already said. Moreover, it has been my observation that, other things being equal, multiple tumors are more likely to be arrested by removal of the appendages than when the growth is single; but I do not consider the rule absolute. do not think that any one would remove the uterus with the expectation of arresting the growth of a soft myoma or of a cysto-fibroma. In neither case would any benefit result.

Dr. Zinke.—But are we able to determine the true condition

before the abdomen is opened?

Dr. Reamy.—Yes, a diagnosis can usually be made. Yet the feel of a growth through the abdominal wall, aided by conjoined manipulation, may in certain cases be misleading. We cannot, in all cases, even tell with certainty when there is fluctuation. But, in addition to the evidence furnished by palpation, the history of the case and the usually rapid growth of the myoma may aid us materially. Ordinarily we have but little trouble in the diagnosis of a fibro-cystoma. But in all these cases, when in doubt, we should make an exploratory incision, prepared to remove the appendages or the tumor or the uterus, as the certain diagnosis revealed by the incision may indicate.

only safe rule, saving time and avoiding perplexity.

In reference to Dr. Johnstone's question as to the influence of removal of the ovaries upon the sexual appetite, I have had several cases in which I have investigated it since my paper read before the American Gynecological Society. I called attention in that paper to a case in which I removed all the uterus except the cervix. I made a suprapubic hysterectomy for a bleeding and rapidly growing cysto-myoma, and removed both ovaries and tubes, an ovarian tumor, and an intraligamentous cyst, all at one operation. The woman made a good recovery, but died three or four years afterward of cancer of the omentum. I asked the husband, about two years after the operation, as to her general health, which he said was good; asked as to her sexual appetite, and he said her sexual appetite was much stronger than before and the act was perfectly satisfactory to both parties. The cancer from which she died was of the omentum, and it also developed in other portions of peritoneum, but not in the uterine cervix left after operation. Women who have cancer of the uterus have increased sexual appetite as a rule. That is a fact about which not much has been said, but which will be found to be true. This continues until intercourse becomes painful or offensive.

I do not think the statements of Dr. Goodell are much overdrawn. My own observations confirm his views in the main. The important questions are no longer, Will the woman survive the operation? what will be the immediate results? but, What will be the ultimate results?

In one case I reported to the Gynecological Society, in which the patient had reported no abatement of the sexual appetite, the appetite is now entirely extinct. I removed the ovaries from a kept woman who had nymphomania. She informed me that it was impossible for her to restrain herself in the presence of men, sexual excitement was so great. On removing the ovaries some enlargement of the left was found and some cystic degeneration. The mucous membrane of the tubes was considerably thickened and there was considerable granular matter in the tube. Twelve months from the time of operation she said the sexual appetite was much diminished. She avowed that desire was only stimulated in presence of the one man. Very recently this woman came to the Cincinnati Hospital to consult me, and reported all sexual appetite extinct and not the slightest gratification in the sexual act. She is now about 37 or 38 years of age.

I am thoroughly satisfied that in a large number of cases the operation abridges the appetite and ultimately obliterates it. Other things being equal, the younger the woman, and the shorter time since marriage when the operation is done, the more certain that interference with sexual power will follow.

It is well known that castration in childhood usually intercepts development of sexual power when the proper age is reached.

Dr. Johnstone.—What do you think is the difference in the percentage of the loss of sexual appetite in those who have reached the normal menopause and those in whom it is artificially produced?

Dr. Reamy.—Reliable information on these points is difficult to obtain. Both husband and wife may be polite to you when you seek testimony on such topics, but their statements must often be taken with allowance. Unquestionably, however, many women no longer have sexual desire after the normal menopause. With quite a number, on the other hand, it is increased, remaining in normal force for many years. So in some cases after the artificial menopause this appetite is not seriously impaired, but in the majority of cases it is. The chief evil lies in the fact that when the menopause is artificially and prematurely induced, both husband and wife are deprived of years of sexual

activity to which they were legitimately entitled, coupled, of course, with the more sacred and exalting prerogative of paternity.

In the presence of otherwise incurable and unsexing disease these considerations have no weight. Otherwise they should be

supreme.

So far as the nervous functions may be concerned, the sexual power is in the lumbar cord, but the consent to the exercise of that power is a process taking place within the skull. Within the kingdom of pure conjugal affection, love of husband and hope of maternity no doubt go far to maintain sexual propensity and power in some women in whom existing pelvic disease

would otherwise obliterate these functions.

Not long since I was visited by a gentleman, 38 years of age, upon whose wife I had four years before made a vaginal hysterectomy for cancer, removing of course the entire uterus and one ovary. One ovary, however, was not disturbed. The woman was 34 years of age, the mother of three children. The object of the husband's visit was to inform me that his wife was to call on me soon that I might witness how robust she had become. But, said he, "for your life don't tell her that you removed her womb. She has no idea that it was removed." I asked as to sexual relations. He answered: "They are perfect as before, and satisfactory to both of us." He expressed the fear that if she learned the facts these matters might change.

Dr. Zinke.—I have been extremely interested in this subject, and wish to pass my compliments upon the manner in which it has been presented. Most of what the essayist has said cannot, as you well know, be controverted. Some of it, however, still lacks evidence and should not be accepted until additional proof has been furnished. Not that I doubt the essayist's sincerity, but I cannot altogether subscribe to his views. I do not believe that the best of us is always able to diagnosticate from macroscopic inspection alone, and before the diseased organ itself has been exposed, whether he is dealing with a "hard" uterine fibroid, pure and simple. In some instances I will admit that one may be able to do so, but even then a certain risk is incurred if the ovaries and tubes alone be removed. Again, the essayist claims, especially for the multiple form of uterine fibroids, that, if the tumors have not attained a size sufficient to extend up to the umbilious, a cure can be effected in every instance by simple removal of the ovaries and tubes. This does not correspond with my experience. Multiple fibroids of the nterus furnish a condition of things which, if not in every instance, at least in the majority of them, preclude the possibility of completely removing the ovaries and tubes. One may succeed in taking out the ovaries in most cases, but it is rarely if ever possible to remove the tubes entirely, because in all the cases I have seen they are bound down tightly and tortnously

over and between the tumors, and it would be an exceedingly difficult matter, under such circumstances, to remove them and at the same time include within the ligature the "nerve of menstruation," or the "Johnstone nerve." I hope that I may be able before long to find satisfactory evidence which will convince me that we should content ourselves with the simple removal of the ovaries and tubes, if this be possible, in these cases. So long as there is a possibility that a fibroid tumor or tumors of the uterus may continue to grow after extirpation of the adnexa, I do not believe that we are justified, after opening the abdominal cavity, in stopping short of the removal of the whole of the diseased mass. Of what use, for instance, is a diseased uterus to a woman? Can she possibly be any worse without it than she is with it? Is there increased risk in the removal of the whole organ? I think not, except when complicated by extensive and firm adhesions.

Now as to the nerve theory of menstruation. The theory, as well as the nerve, are plausible possibilities. I do not believe "Johnstone's nerve" has ever been satisfactorily demonstrated; certainly I have never been able to detect it. Christopher Martin's paper on this subject, published at a recent date, indorses and seeks to corroborate by additional testimony the views which the speaker of this evening has set forth in his interest-

ing dissertation.

Dr. Johnstone has struck the nail on the head in reference to our failures in securing relief to some of our patients after resorting to celiotomy, when he attributes the same to the existence of pathological conditions within the cavity of the uterus and the vagina. Operators of experience will subscribe to

everything he has stated in this regard.

Dr. Bonifield.—The removal of the uterus is a long, tedious, and dangerous operation in the hands of the average operator. The removal of the ovaries is comparatively simple, and in the great majority of instances, when the fibroid is small, it is efficacious. My experience in removal of ovaries for fibroids is limited to one case, which I did before going to Europe. The patient had two tumors, and the mass just came barely below the umbilicus at the time of the operation. She did bleed, at irregular intervals, a good deal after the operation, up to six months ago, when I curetted her. The tumors have apparently become smaller, and she is now comfortable and able to work every day. And so I do not think one can say that because they are multiple you should not remove the ovaries. I do not think that has so much to do with it as the location of the tumors.

Dr. Zinke.—I do not wish to be misunderstood. I did not mean to say they were not dangerous operations; of course they are dangerous operations, and so is oöphorectomy with the removal of the tubes. The operation for the tumor I presented

at the last meeting did not take me over half an hour. I removed the entire uterus.

I was in hopes some of the members would express themselves as to the sequelæ which are said to follow the removal of the uterus and ovaries, especially as expressed by Goodell. I have never seen a single case in which the symptoms of insanity have manifested themselves, and never, even where I have removed the entire uterus, have the individuals been deprived of their sexual desire. I have made it a point to inquire, and told them why I wanted the information, and the answer in every case was freely given that they felt as much attached to their husbands as before and enjoyed the act as much as ever. But I believe that, if Goodell's views were much circulated among the women who have been operated upon, some of them would lose their minds because it came from Goodell.

TRANSACTIONS OF THE WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY.

Stated Meeting, December 16th, 1892.

The Vice-President, H. L. E. Johnson, M.D., in the Chair.

Dr. H. L. E. Johnson read a paper entitled

DOUBLE OVARIOTOMY.1

Dr. H. D. Fry said that he had been asked only that evening to open the discussion, and was not well prepared to thoroughly discuss the paper. The subject of bilateral operation was an interesting one. The question arose: When one ovary was diseased, should both be removed? The tendency was to bilateral disease, and, as the dangers of the operation were not much increased, he thought it best to remove both at one time. He referred to a number of reported cases where a second operation was necessitated, showing the tendency to bilateral disease; it occurred in ten per cent of cases. In Dr. Johnson's case, both ovaries being diseased, there was no question as to the necessity of the operation. Double ovariotomy had been successfully done in a number of cases during pregnancy. T. A. Emmet reported a case of double ovariotomy in which the woman continued to menstruate regularly for four years afterward. It was important to be sure that the blood vessels were

¹ See original article, p. 665.

securely ligated, to prevent hemorrhage. Hanks, of New York, said this was best done by ligating each artery separately and then throwing a ligature around the entire mass. He thought it best to apply a ligature tightly and cut off the diseased tissue, and then tie the ligature a second time. He had recently to deal with a friable pedicle, to which he had applied two ligatures, and still the hemorrhage continued; he then seized the mass with a hemostatic forceps, and brought the forceps out through the wound in the abdomen, and left it on for forty-eight hours, effectually controlling the bleeding. In another case blood continued to ooze up from the torn adhesions, and was controlled by packing with iodoform gauze, which he left in for four days.

Dr. H. L. E. Johnson said he was obliged to Dr. Fry for the pleasant way in which he had discussed the subject. He said the question might arise as to the diagnosis, whether it was a cyst of the ovary or of the uterus itself. He said the interesting feature of the case was the good result from the complete aseptic method pursued throughout the operation. Everything was completely aseptic. Dr. Fry had referred to cutting off the diseased tissue and afterward putting a second ligature around the stump. This might be a good plan, but there was danger of disturbing other ligatures. He thought it better to put on all ligatures before cutting. The tamponade should not be necessary, in some cases of oozing, if hot douching were used.

Stated Meeting, February 3d, 1893. T. C. Smith, M.D., in the Chair.

Dr. J. T. Winter read a paper entitled

PUERPERAL ECLAMPSIA—ITS THERAPEUTICS.1

Dr. J. Foster Scott said that the subject of eclampsia was of much importance. He who had to deal with an eclamptic patient passed through a most trying ordeal. It was essential that one should have an idea of the cause of the condition before he could treat it intelligently. Eclampsia was not a very distinctive title in itself, inasmuch as it occurred under such varied conditions. There might be eclampsia gravidarum, coming on at or after the seventh month, eclampsia of the parturient woman, and eclampsia after delivery, the therapeutics being different in each condition. Dr. Winter's title was "Puerperal Eclampsia." He thought puerperal convulsions a better designation. Parvin's statistics show that puerperal convulsions occur once in two hundred and fifty cases. There was no disease in medical science in which the etiology was so unsatis-

¹ See original article, p. 639.

factory. Angus MacDonald, of Edinburgh, said there might be albumin in the urine without eclampsia, eclampsia with albumin in the urine, and eclampsia without albumin in the urine. Dr. A. F. A. King had advanced a new theory—that pressure on the kidneys and their vessels caused interference with their function, and the effete matters remaining in the blood caused the convulsions. Dr. Scott thought that the theory that the disease was a neurosis was as plausible as any and met with his approbation. The sympathetic ganglia on the lumbar vertebræ were enlarged, their sensibility being increased. Many authorities maintained that the convulsions were due to a condition of edema cerebri. There was a vaso-dilator influence causing effusion into the brain. When there was cerebro-spinal congestion venesection was proper; but where anemia or hydremia existed blood-letting was unwise. Plural gestation had been mentioned as a cause, and Prof. Simpson said convulsions occurred only in those cases; this was disproved in Dr. Scott's experience. Comparative anatomy had some bearing upon the subject. Billings said that puerperal convulsions occurred in all the milk-giving animals, the highest-bred being most liable to them. This would seem to help out the theory that the disease was a neurosis. In the treatment of puerperal convulsions not many drugs were available. While in Columbia Hospital nine cases had come under his observation. As a routine treatment he gave hypodermatically one-half grain of morphia sulphate. This he considered one of the most valuable agents. Chloral was not so good. After the morphia the patient was placed in a hot bath for half an hour, the temperature of which was from 105° to 115° F., one-tenth of a grain of pilocarpine having been previously given. After coming out of the bath the patient was placed in a hot pack, and if the convulsions continued he gave chloroform. He had not much confidence in oleum tiglii in these cases. He thought there would be danger of erosion of the stomach from ten-grain doses of cupri sulphas if the patient failed to vomit. He had treated seven cases without a death, and was beginning to think the disease not so dangerous as it was represented, but his two next cases died and he changed his opinion. In one case he could not excite perspiration, and he applied dry cups over the lumbar region. Gibbons, of San Francisco, applied ice to the spinal column with benefit. In those cases in which the temperature was high the cold bath should be used instead of the hot. In puerperal eclampsia there was an elevation of the temperature, while in uremia the temperature was low. He did not believe in veratrum in puerperal convulsions, but venesection was sometimes beneficial. In eclampsia gravidarum the treatment was expectant. In eclampsia parturientium the nicest discrimination was required. He would use chloral, chloroform, and relaxants. If it was determined to deliver it should be done as soon as possible. Podalic version was preferable to the forceps. If embryulcia was ever justifiable it would be in these cases.

Dr. G. B. Harrison asked, if the ice bag was inconvenient,

would the ether spray be advantageous!

Dr. Scort said he doubted if it would. Ether would lower the general temperature. Ether spray or cocaine to the cervix might be beneficial.

Dr. G. B. Harrison asked if good musk would be advisable. Dr. Scott said it would be in hysterical cases, but not when

ptomaines were in the blood.

Dr. W. S. Bowen asked if, after the hypodermatic injection of as large doses as half a grain of morphine sulphate, there was diminution of urine.

Dr. Scott said he did not consider half a grain a large dose under the circumstances. He, however, had not observed any decrease in the quantity of urine. It was ordinarily scanty.

Dr. W. S. Bowen said that as morphia diminished the secretion of urine, would it not be better to give chloroform inhalations and give chloral per rectum?

Dr. G. B. Harrison inquired as to the value of amyl and

nitroglycerin.

Dr. Scott said nitrite of amyl dilated the capillaries, but its influence was transient. He was not convinced of its efficacy.

Nitroglycerin was slow in action.

Dr. J. T. Winter said he had many times given ten grains of cupri sulphas, not so often in eclampsia. It was a most prompt emetic, usually acting in two or three minutes. He thought nitrite of amyl might be advantageous after the convulsions when the heart was weak. He had frequently taken as much as one-twenty-fifth of a grain of nitroglycerin without any inconvenience except slight fulness in the head. Others were very susceptible to one-hundredth of a grain. He would rather depend on morphia than on any single remedy in puerperal convulsions.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Meeting of March 7th, 1894.

The President, G. E. HERMAN, M.D., in the Chair.

The following specimens were shown: Dr. Duncan: (1) Ruptured tubal gestation sac with embryo in situ, and a drawing of the same; (2) Polypoid myoma of cervix. Dr. Leith Napier: (1) Fetus with ectopia viscerum and retroflexion of spine (referred to sub-committee); (2) Anencephalic fetus.

A PLEA FOR THE PRACTICE OF SYMPHYSIOTOMY, BASED UPON ITS RECORD FOR THE PAST EIGHT YEARS.

This paper was by Dr. Robert P. Harris, of Philadelphia. The author mentions the unfavorable statistics of the operation of symphysiotomy during the period 1777 to 1858, and the great reduction of mortality in both mothers and children since its revival by Morisani in 1866, and points out that the success obtained by this operator and by Novi and others in Italy shows that the operation is founded on a rational basis. He considers that the results obtained in other countries are very encouraging, and mentions the following as the best conditions for the performance of symphysiotomy in view of saving the child's life: the woman should be operated on in good season; the size of her pelvis should be accurately ascertained; the true conjugate should not measure less than two and three-quarter inches. The child should be very carefully, not hurriedly, delivered by the forceps applied to the sides of the head, and if asphyxiated it should be carefully treated for its restoration.

Dr. Lewers said that Dr. Harris had inquired what stopped the progress of symphysiotomy in England. Dr. Lewers' own case, operated on last year, was the only one published in England since the revival of the operation. He thought that some of the early mortality was due to the operation having been performed in extreme cases of pelvic contraction, and much to the want of asepsis. He pointed out the difference in rigidity of the pelvic joints in pregnant and in non-pregnant women, and that in the former a gain of three-quarters of an inch in the conjugate was possible. He considered the indications for operation were failure to deliver with forceps in a slightly contracted pelvis, and that strict asepsis was necessary. He estimated the

present mortality of symphysiotomy at seven per cent.

Dr. Horrocks, after mentioning the three alternatives in the case of a living child which could not be delivered alive (namely, craniotomy, Cesarean section, and symphysiotomy), said that craniotomy should have a mortality of nil, and he believed the mortality of the second alternative to be less than that of the third—certainly more children were saved. He mentioned the unfavorable after-effects of Cesarean section, and related two cases where conception had occurred after this operation when the tubes had been ligatured. Sterility would be best obtained by removing the ovaries or by excising a piece of the tube. He had witnessed one case of symphysiotomy, and was astonished at the wide separation of the halves of the symphysis; he was only able to surmise what state the sacro-iliac joints must be in. The woman had been unable to work since, and was now, he had heard, in an infirmary. He would like to know if this was common, and instanced Dr. Lewers' case, where the patient could not do her work so well as before operation. He should recommend a patient, under the conditions named, to have craniotomy performed, or, if she were anxious to have a living child and willing to take the extra risk, Cesarcan section, in preference to

employing symphysiotomy.

Dr. Griffith thought the reason why symphysiotomy was not more frequently done in England was because the operation was a very serious one for the patient. He had not yet found, although he had about three thousand cases of labor annually under his charge, the conditions necessary for its performance present—namely, the patient in labor; a moderate degree of contraction (conjugata vera not less than three inches); the fetus alive, and delivery impossible with forceps properly applied. He believed the total risks of Cesarean section were less

than those of symphysiotomy.

The President said that obstetrical science was much indebted to Dr. Harris and others who had put their results before the profession. The percentage mortality appeared to be about ten—not lower than that of favorable Cesarean section. The latter operation could be combined with sterilization, but the best way of doing this had not yet been established. Symphysiotomy, in which operation the patient could not be sterilized, might be required many times in the same patient. We had no information as to whether frequent division of the symphysis could be done on the same woman with good union each time, and the after-histories of symphysiotomy cases were as yet wanting. In one recorded case the patient could not do her work as well as before; in another laceration of the urethra occurred. He was inclined to think Cesarean section preferable to symphysiotomy.

ON THE RELATION OF HEART DISEASE TO MENSTRUATION.

This paper was read by Dr. Gow. Particulars with regard to menstruation are given of fifty cases. In twenty-eight the menstrual flow was unaltered. In seventeen the flow was absent or scantier than before. In five the flow was either more profuse or recurred more frequently than before. In no case was there good evidence that heart disease gave rise to severe menorrhagia. It would seem that either amenorrhea or scanty menstruation was a far more common accompaniment of heart disease than menorrhagia.

A further analysis of these cases seems to point to the fact that heart disease leads to relative sterility, and also that it greatly increases the tendency to premature expulsion of the

ovum.

In conclusion, it is pointed out that a large number of women suffering from valvular disease of the heart pass safely through the period of pregnancy and labor.

For convenience these cases may be further analyzed as

follows:

1. Mitral stenosis (twenty-two cases): In nine cases menstruction regular and amount lost unaltered; in five cases menstruction regular but more scanty; in four cases there was amenorrhea; in four cases menstruction was either more frequent or more profuse.

2. Mitral incompetence (fifteen cases): In ten cases menstruation unaltered; in four cases menstruation more scanty; in one

case amenorrhea.

- 3. Mitral stenosis and incompetence (seven cases): In four cases menstruation unaltered; in one case menstruation more scanty; in one case amenorrhea; in one case slightly increased menstrual loss.
- 4. Aortic incompetence and obstruction (two cases): In both cases menstruation unaltered.
- 5. Aortic and mitral incompetence (three cases): In all cases menstruation unaltered.
- 6. Aortic incompetence and obstruction and mitral incompetence (one case): Menstrual loss more scanty than before.

Dr. John Phillips was much interested in the paper, as he had for some time been investigating the subject. He commented on the want of reference to this subject in the whole literature of the past twenty years. He had examined the hearts of six hundred and fifty-six women consecutively, whose ages varied between 18 and 44, in the out-patient room at King's College Hospital, and had observed fifteen cases of organic heart disease. In none was there menorrhagia, in most a tendency to amenorrhea, and in two aortic cases the patients attended in consequence of amenorrhea and breathlessness. He agreed with Dr. Gow in all his conclusions, except that he thought perhaps a woman conceived as readily with a damaged heart as with a healthy one. The tendency to abortion was undoubted.

Dr. Horrocks recognized the value of the paper. He thought, however, that more accurate knowledge could be obtained by comparing the menstrual history of a patient with the condition of the heart found post mortem. Records of the menstrual function were rare in medical and surgical reports. He pointed out that most of the author's cases were instances of mitral stenosis, and that it was only when tricuspid regurgitation occurred that any marked effect could be expected in the uterus. In the cases where the tricuspid valves were incompetent there was no menorrhagia. He thought all the facts were in favor of

Dr. Gow's conclusions.

The President called attention to the admirable method of Dr. Gow's research. Instead of taking patients who came to a hospital for their special diseases, and in whom there would appear a greater frequency of functional disturbances of the genital organs associated with heart disease than was actually the case, the author took patients with heart disease and inquired into the frequency of menstrual disturbance in them.

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He (the President) had made some observations on the effect of venous congestion from heart, lung, and liver diseases on menstruation, and his results, in the main, agreed with those of Dr. Gow. The text books said that heart disease caused intense hemorrhage; the "Clinical Lectures" of Dr. Matthews Duncan were an exception to the rule.

Dr. Griffith had met with an instance of menorrhagia co-

existing with mitral regurgitation.

REVIEW.

Medical Report of the Society of the Lying-in Hospital of the City of New York (Midwifery Dispensary). Pp. 186. With 25 charts and 36 illustrations. New York:

Martin B. Brown, 1893.

First originated and established as the Midwifery Dispensary in December, 1889, by Drs. James W. Markoe and Samuel W. Lambert, in the heart of the tenement-house district of the crowded East Side of this city, for the purpose of furnishing better instruction in obstetrics to graduates and students of medicine, and to assist the large class of poor women dependent upon ignorant widwives, this institution has developed more rapidly than was at first thought to be possible; later governed by a medical board of 4 consulting and 5 attending physicians, it was finally, in August, 1892, amalgamated with the Society of the Lying-in Hospital of the City of New York.

Some idea of the growth of this novel undertaking may be

drawn from the following figures:

In the year ending December 31st, 1890, 199 women were attended in confinement at their own homes; 62 graduates and students of medicine were instructed at the bedside; and in the executive building accommodation for a resident and 1 assistant resident physician and 7 students only was required.

For the year ending December 31st, 1891, 955 cases of confinement were cared for; 243 graduates and students were instructed; accommodation was demanded for the resident, 3 assistant resident physicians, 20 students, and 2 nurses, requiring the whole of a five-storied tenement house to contain the

same.

The present report of the institution, the third in numerical order, covers a period of 15 months, during which time 2,583 women, mostly Russians of the very poorest class, were cared for. It opens with an introduction, and then there follows a statistical synopsis covering 15 pages. In the 2,583 cases

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already referred to there were 26 cases of prolapse of the cord, 8 instances of placenta previa, and 4 of eclampsia. There were 36 cases of twins, or 1 case in 71.75 cases of labor. Under operations we find that in the 2,583 cases the forceps was used only 54 times, including 26 "low" operations and 1 for the aftercoming head. Internal podalic version was performed for various indications 56 times, manual extraction of breech in 80 instances; labor was induced 4 times; craniotomy was performed in 2 instances; there was 1 successful case of Cesarean section and 2 of symphysiotomy. In the 2,583 cases there were 11 deaths, or 1 death in 234.81 cases. The causes of death were as follows: pneumonia, 2 cases; eclampsia, 2; rupture of uterus, 3; facial erysipelas, 1; inanition, 1; pulmonary tuberculosis and hemorrhage, 1; placenta-previa hemorrhage and shock, 1.

The leading article of the report, by Drs. Lambert and Painter, is a critical study of the cases of fever occurring in the hospital during a period of three years. This article, in its introduction, defines the term "fever" as here used, and the character of the cases described and treated of. The classification includes (1) breast complications, (2) constipation, (3) complicating diseases, (4) septicemia, etc., and (5) cases in which no accountable cause could be found. The etiology, pathology, clinical types with illustrative cases, and treatment are discussed under each of the above headings. The original matter is limited to facts of a clinical nature. There were 591 cases of fever in 3,737 puerperal women, many of which were received as post-partum cases from midwives. Of the 2,283 puerperal cases confined by the hospital the percentage of fever was 12.7, of which 3.82 per cent was due to septicemia. The percentage of death in all fever cases was 0.2. There were 8 deaths from sepsis in 3,737 cases, and, of these 8, 4 were confined by midwives and 4 by the hospital.

Following the fever article is one by Dr. Markoe, drawing attention to the utero-vaginal angle as a factor in the mechanism of placental expression. A successful case of Cesarean section performed in a tenement house, as well as three successful cases

of symphysiotomy, are reported by Dr. Edgar.

The papers are concluded by a most scientific and valuable one by the embryologist, Dr. George S. Huntington, on the development of the cecum and vermiform appendix, which gives the results obtained from the study of 140 embryos ranging from 11 millimetres cervico-coccygeal measure to the fetus at term.

We have looked into the working of this institution, and believe that the interests of medical science in general, and of the science and art of obstetrics in particular, are furthered by the earnest, thorough, and painstaking work that these younger men of the profession, who constitute the attending staff of the hospital, are carrying on in our midst. The educational system of

the hospital is steadily being perfected. Ante-partum examinations, with special attention to pelvimetry, are now made by each student during his two weeks' term of service; an instructor accompanies each individual student to all his cases of confinement; quizzes and lectures are given by the attending physicians to the first- and second-week students, both in the hospital building and at the bedside. At the lectures and quizzes, asepsis, the examination of pregnancy, the care of parturient and puerperal women and of the child, are dwelt upon, and the abnormal cases and operations of the past few days are discussed and illustrated by means of manikins, charts, and appliances.

E.

ABSTRACTS.

1. Dayot, H.: Enormous Ovarian Cyst in a Girl 17 Years of Age; Removal; Recovery (Arch. prov. de Chirurgie, September, 1893).—The tumor had been present for three years, but the patient and her family refused an operation until the enormous size of the growth alarmed them. Its largest circumference was five feet eleven inches. A tape measure starting



from the xiphoid appendage and ending at the symphysis pubis, following the linea alba, measured three feet. The distended and glistening skin showed a rich network of veins which extended to the lumbar region and about the thorax. A few of the veins were the size of the little finger. The umbilicus had totally disappeared. The tumor dropped downward when the patient stood erect, and even in the dorsal position it completely hid the upper part of the thighs. It also encroached upon the thorax. Fluctuation was very apparent throughout the greater

part of the tumor; dulness was absolute. By palpation and percussion of the thorax the apex of the heart was found to be in the third intercostal space, as was the upper border of the liver. Respiration did not extend to the lower portion of the thorax.

The patient was emaciated, ate very little, vomited occasionally, was obstinately constipated, and urinated frequently but in small amount. There was no albuminuria. Walking was difficult, the slightest movement causing dyspnea. An operation was suggested, and the patient's arrival at the hospital caused

astonishment and dismay to all the assistants.

Anesthetization by chloroform was well tolerated. An incision six inches long was made in the subumbilical region, and fifteen quarts of ascitic fluid removed. The cyst was then punctured and sixty-five quarts of a thick, brown fluid withdrawn- A full hour was taken up by the process, as the patient collapsed three times; hypodermic injections of ether and caffeine were administered and artificial respiration practised. The cyst, which was closely adherent to the abdominal walls, was with some difficulty removed, causing considerable hemorrhage. The operation was terminated as rapidly as possible, having lasted two hours and a half.

Recovery took place, with some drawbacks in the shape of vomiting, diarrhea, and some pulmonary congestion. On the twenty-fifth day the patient was sent home. Six months later she was unrecognizable as the same person, having become a fine-looking girl with a well-shaped thorax. Eighteen months after the operation she was still in excellent health. A. R. s.

2. Levrat, G.: A Method for the Correction of Retrover-SION OF THE GRAVID UTERUS (Arch. de Toc. et de Gyn., October, 1893).—Retention of urine is, as a rule, the first symptom of retroversion of a gravid uterus, and, on the other hand, distention of the bladder due to an accumulation of its contents, during sleep for instance, may often be a cause of retroversion. Evacuation of the bladder at regular intervals, in the hope of thus obtaining a spontaneous correction of the displacement, constitutes the expectant treatment of the condition, which in some cases has given good results. The use of the catheter is, however, attended with some difficulty, and requires the utmost care to avoid infection. Moreover, delay sometimes leads to abortion from impaction of the uterus, to sphacelus of the vagina, bladder, or rectum, to cystitis, pyelonephritis, or uremia. The expectant treatment is not safe, and it may be stated as an axiom that when, during the course of a pregnancy, retroversion is found to exist, its reduction should be at once attempted.

The maneuvres in use for this purpose are two, manual and instrumental. The former, which is the one usually employed, consists in introducing one or two fingers into the vagina and

rectum, and in drawing down the cervix while pushing the body of the uterus upward. This method is often inefficient and may lead to abortion. Barnes uses lateral instead of upward pressure, in the hope of setting free the uterus which is caught under the projecting promontory. Lateral pressure may be combined with traction in the opposite direction upon the cervix. A Hodge pessary is then introduced to prevent a return of the retroversion.

The instruments used to correct the displacement may be simply those devised to take the place of the fingers, as Petit's spatula, or else pessaries or rubber balls whose action is that of gradual pressure upon the uterus.

Laparatomy has been recommended as a last resource; the hand is introduced into the abdominal cavity to rectify the dis-

placement.

Laroyenne's process, which is that favored by Levrat, consists of two separate steps. The hand is introduced into the vagina and pushed up between the pelvic wall and the uterus to the promontory, without, however, exercising direct pressure upon the uterus. It may be made by following the hollow of the sacrum, but it is better to reach the promontory by passing around the wall of the pelvis. This maneuvre usually results in freeing the uterus from the pelvic cavity and letting it return to its proper place in the abdomen. Should the cervix still be directed upward and forward, the second step in the operation must be taken, and consists in the introduction of a properly constructed pessary. One of the shape of a Hodge pessary with a large posterior curve will be appropriate, and, as it is to remain in place for a short time only, it will be found convenient to use one of flexible wire covered with rubber. The posterior curve should not press upon the uterus at any point, which is one reason for making it large, but should, when in position, be entirely contained in the groove made by the operator's hand between the uterus and sacrum. Under these conditions the displacement is usually reduced in about twenty-four hours, the result being recognized by vaginal examination, palpation of the abdomen, cessation of the bladder symptoms, and reappearance of the utero-placental souffle, which is always suppressed during retroversion of a gravid uterus. This suppression is probably due simply to the fact that the uterus, when displaced posteriorly, is further away from the abdominal wall. It is best that the pessary should remain in place five or six days, after which it may be removed

When prolapsus coexists with retroversion the urinary trou-

bles are less acute. The treatment is essentially the same.

Laroyenne's procedure is so simple that, as a rule, no anesthetic is required, but there should be no hesitation in giving it if the patient be nervous or exceptionally sensitive. It will, moreover, facilitate the treatment.

A. R. S.

3. Leopold and Spörlin: The Management of Normal Labor by Abdominal Palpation only (Archiv für Gynäkologie, Band xlv., Heft 2).—The authors point out that, in spite of the introduction of antiseptics in obstetrics, the mortality and morbidity in private practice remain practically undiminished. The cause of this are overfrequent and needless vaginal examinations. Even strict antiseptic precautions are uncertain safeguards against infection, because the vagina frequently harbors pyogenic bacteria, which the examining finger may ingraft into the numerous abrasions accompanying every act of labor. The prophylactic vaginal douches, at one time so much in vogue, do not lessen this danger. The vagina is not made sterile by the douche, but the antiseptic fluid removes the lubricating mucus which shields the tissues and prevents lacerations.

Leopold is a prominent advocate of managing normal labor cases by external examinations only, and he reports one thousand cases in which this method was exclusively employed. In nine hundred and thirty-five a correct diagnosis of the position and presentation was made. In the remaining sixty-five errors

occurred, namely:

Occipito-anterior9	71	cases,	wrong	diagnosis	54 =	5.6 per	cent.
" posterior	6	6.6	"	""	2 =	$33\frac{1}{3}$	6.6
Breech	12	6.6	66	6.6	2 ==	16.6	6.6
Face	6	6 6	4.6	6.6	6 =	100	"
Twins	4	6.6	6.6	6.6	1 =	25	6.6

This at first sight may stamp abdominal palpation as an unreliable method of diagnosis, but the authors claim that in cases in which vaginal examinations only are employed diagnostic errors are even more frequent. They also point out that many of those responsible for the above diagnosis had only limited experience with abdominal palpation, and that in the course of time, with more practice, errors will be less frequent.

The methods employed and advocated are divided into four

distinct manipulations:

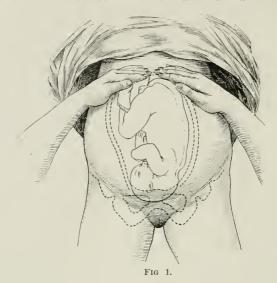
1. Both hands, slightly flexed, are placed upon the abdomen and gradually carried upward toward the fundus. This shows the size of the uterus, time of gestation, whether the child is in longitudinal or transverse position, and whether the head or breech occupies the fundus. (Fig. 1.)

2. The hands are placed upon each side of the uterus; then under one hand is felt the arched back, under the other the small parts corresponding in position to the abdominal surface

of the fetus. (Fig. 2.)

3. The fingers of the right or left hand are spread as much as possible and the presenting part seized between thumb and middle finger. If it is round and hard it can only be the head, which can be grasped like a cannonball and moved if above the pelvic brim. The breech is softer and its surface more irregu-

lar. If the outlines of the presenting part are indistinct, placenta previa may be suspected. If no presenting part be felt, then the head must be looked for on either side. This third method



is very valuable in all cases in which the presenting part is yet in the entrance of the pelvis. (Fig. 3.)

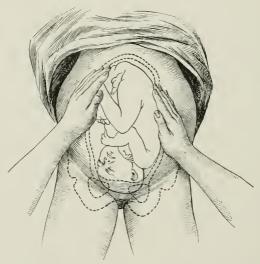


Fig. 2.

4. The physician takes his place at the side of the bed, turning the back toward the woman's face. The hands are placed in such a manner upon the abdomen that the fingers are directed

toward the cervix. During the intervals of pain the hands are pressed down deep into the pelvis and the presenting part is

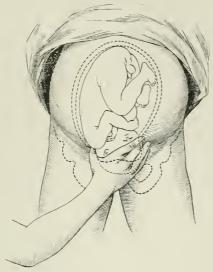


Fig. 3.

grasped. The head is again recognized by its peculiarities. (Fig. 4.)



Besides these methods of diagnosis the authors point out many aids. They say that it is an erroneous idea that the chin can

be made out in ordinary occipito-anterior positions; what is felt is the brow. The chin is in close apposition to the thorax and is entirely out of reach. When the third or fourth method of palpation is practised, the brow is felt upon a higher plane, then the occiput; if this is made out it proves that the occiput is the presenting part. In occipito-posterior positions the brow is on the same level, or lower in the pelvis, as the occiput; the close proximity of small parts to the abdominal walls is also a good diagnostic aid in these cases. In brow and face presentations the distance between the chin and thorax increases, and of course it is most marked in face presentations. In the latter cases the occiput is found very prominent, while upon the opposite side of the pelvis the examiner's hand can deeply enter without encountering the brow or the chin.

The paper contains many other interesting points which it is impossible to condense into the limits of an abstract; those who command the German language will certainly be repaid by read-

ing the original.

The authors urgently request that more attention be given to abdominal palpation. Growing experience will make the physician less dependent upon vaginal examinations; and while not denying the value of, and in many cases the necessity for, vaginal examinations, they believe abdominal palpation a more reliable and safer method.

J. R.

4. Kehrer: "Hydatid Moles" (Archiv für Gynäkologie, Band xlv., Heft 3).—The author has collected and publishes fifty cases of hydatid moles, a few of which were observed in the Heidelberg University Hospital, the others he obtained through correspondence with a number of physicians and midwives. These cases give a more correct picture of this complication than can be obtained from the collection of a large number of cases out of the current literature. In the latter, cases of unusual difficulty (interesting cases) are apt to predominate.

The results of his investigations are grouped as follows:

Hydatid moles are most frequent in the latter part of the child-bearing period, twenty-two per cent occurring in the fourth and fifth decennia. This accords with the observations of Bloch,

Louis Meyer, Schröder, and others.

The prevailing belief that uterine disorders are predisposing factors to hydatid moles were not substantiated; in forty-three cases the uterus and adnexa were normal. Successive molar pregnancy was observed in five cases. Nausea and vomiting are of the same frequency as in normal pregnancy; a feeling of faintness, often aggravated to syncope, is a well-marked symptom. In twenty cases the patients were exceedingly weak and had to be kept in bed for several weeks.

Abdominal pains are noted in nearly fifty per cent. The character of the pains is not made clear from the accompanying

tables. The frequency of abdominal pains, if compared with normal pregnancies, is obvious. It is probable that they are caused by the penetration of the villi into the uterine substance.

Edema of the lower extremities and of the whole body occurred in fifteen cases; in a few of these a nephritis existed. Kehrer asks the question, but does not answer it, whether the condition which produces the edema in the maternal structures might not also be the cause of the myxomatous degeneration of the chorion.

Rapid increase of the uterine tumor, not corresponding to the supposed period of pregnancy, is a notable symptom. Thus at the fifth or sixth month the uterus may have the dimensions of a uterus at term distended by a large amount of liquor amnii; at the same time there is observed an entire absence of fetal parts and heart sounds.

Uterine hemorrhages were noted in forty-one cases, moderate in sixteen cases, excessive in fourteen cases. Their duration

varied from a few hours to several weeks.

During the first few weeks of molar pregnancy uterine hemorrhages are rare; they become more frequent and severe with the growth of the vesicles into the decidua and uterine muscularis.

Most cases of molar pregnancy terminate in the fourth or fifth month of gestation. The excessive growth and consequent overdistention of the uterus, and the irritation caused by the penetration of the vesicles into the uterine substance, favor a premature expulsion of the morbid ovum. The exact figures in torty-nine cases are as follows: in the second month, 2 cases=4 per cent; in the third month, 8 cases=16.3 per cent; in the fourth month, 15 cases=32 per cent; in the fifth month, 13 cases=26.5 per cent; in the sixth month, 8 cases=16.3 per cent; in the seventh month, 1 case=2 per cent; in the ninth month, 2 cases=4 per cent.

The duration of labor is short, and protracted labor is the exception; in two-thirds of the eases it lasted up to six hours. An explanation may be found in the fact that a full dilatation of the os is not necessary for the expulsion of the degenerated

ovum.

Uterine hemorrhages during labor were absent in six cases, scanty in thirteen, and moderate in twenty-eight cases. In twenty-eight cases the hemorrhage was very severe, and fre-

quently (in sixteen cases) accompanied by syncope.

The severity of the hemorrhage is proportionate to the extent of the erosions in the uterine walls. If only the decidua is involved bleeding may be absent: but if the uterine walls, and especially the large veins, are eroded, severe hemorrhages must be expected. The dimensions of the moles vary from the size of a fist to a bucket.

In the majority of cases an expectant plan of treatment was

employed, the expulsion of the ovum being left to Nature in 34 cases = 68 per cent. Kehrer advocates the following method of treatment: The diagnosis of vesicular mole being established, it is advisable to interrupt the progress of pregnancy and empty the uterus as soon as possible. The vulva and vagina are thoroughly disinfected, and the latter tightly tamponed with iodoform gauze. This tampon must extend into the fornix vaginæ, and be so firmly inserted that no blood can come through its interstices. Twenty-four hours later the tampon is removed and the vagina disinfected, and if the os has not opened the tampon is again introduced as before. If the os is dilated and no hemorrhage present, the further progress of the case is best left to Nature, but in case of hemorrhage the uterus should be emptied at once. This is best done by passing two fingers into the uterus, and, while the free hand presses the uterus down from above, the fingers insinuate themselves between the mole and uterine walls, gradually loosening its hold and pressing it out into the vagina. In this way, even large moles may be removed in a few minutes. The interior of the uterus must be carefully explored, and any remaining cysts are removed. Intra-uterine douching is permitted only up to the third month; after this there is great danger of injecting the disinfecting fluid into the open uterine vessels.

Post-partum hemorrhage not arrested by ergot or massage must be checked by intra-uterine tamponade after Dührssen. A normal puerperium was obtained in two-thirds of the cases; in the remaining one-third various disturbances are noted. The relative frequency of abnormalities may be explained by the anemic condition present in many of the puerperæ. Anemia, as is well known, predisposes to septic infection. Parts of the mole are frequently left behind, undergoing decomposition and causing putrid intoxication, and the erosions of the uterine walls

form good breeding places for bacteria.

Kehrer reports no death from hydatid moles, but he believes that some have occurred which were not mentioned by his correspondents.

Vesicular moles are observed in four different forms:

1. Mola hydatidosa incipiens.—It forms a cyst corresponding in size to an ovum of the third or fourth month of gestation, consisting of an amnion and chorion, upon the surface of which there are numerous vesicles. The embryo is either entirely absent or some of its fragments float in the liquor amnii. The umbilical cord may be absent or present.

2. Mola hydatidosa partialis.—In these cases the fetal membranes and the placenta are normally developed, but some of the placental villi are surmounted by vesicles, or parts of the placenta are changed into bands or plaques of vesicles. The branches of the umbilical artery leading to these degenerated

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villi are obliterated. The fetus is often living, sometimes nor-

mally developed, sometimes stunted in its growth.

3. Mola hydatidosa totalis.—The ovum is a mass of vesicles surrounded by a decidua perforated in numerous places. Remnants of fetal membranes are sometimes found in the midst of the vesicles. Of the fetus no trace is left.

4. In this group of cases twin pregnancy exists. One ovum is normally developed, the other one is a shapeless mass of myxomatous villi. Besides the one case observed by Kehrer, eleven

are reported by various authors.

The most important and interesting vital properties of hyda-

tid moles are the following:

1. The vesicles of a hydatid mole consist of living and growing tissue elements. Fatty degeneration of the epithelial covering and the connective-tissue stroma exists only to a minor degree. If vesicular moles had their origin from dead masses of issue remaining in the uterus, a theory held by many, fatty and other degenerative changes ought to be well marked. Instead of this an unusual development of a proliferating tendency is found.

2. Vesicular moles receive their nutrition direct from the uterine walls. The normal chorion villi are nourished from the blood vessels of the allantois, the development of the vessels keeping pace with the growth of the villosities. In vesicular moles this mode of blood supply cannot exist, because in cases of total degeneration of the chorion there is no embryo and no system of fetal circulation, and in partial hydatid moles the blood vessels leading to the portion of degenerated placenta are found to be entirely obliterated.

In spite of this seemingly unfavorable mode of obtaining nutrition, the villi of a hydatid mole develop an unusual degree of vital energy. Although being totally devoid of inherent vascular elements, they grow, multiply, and destroy the firm uterine tissues. The cause of this surprising amount of vital force is not known; it is possible that the albuminate substances stored in the interstices of the myxomatous tissues are in some way related to it.

ITEM.

PROGRAMME OF THE NINETEENTH ANNUAL MEETING OF THE AMERICAN GYNECOLOGICAL SOCIETY,

To be held in the Columbian University, corner of Fifteenth and H streets, Washington, D. C., on May 29th, 30th, and 31st, 1894. Physicians are cordially invited to be present.

FIRST DAY.—Morning Session: Address of welcome. 1. Discussion: Extirpation of the Uterus in Disease of the Adnexa.

720 ITEM.

Opened in the affirmative by Dr. J. M. Baldy, followed by Drs. Florian Krug and H. T. Hanks; in the negative by Dr. T. A. Reamy, followed by Dr. W. G. Wylie. 2. Discussion: The Management of Face Presentation. Opened by Dr. Edward R. Reynolds, followed by Drs. Charles Jewett, B. C. Hirst, C. P. Noble, and E. P. Davis. Afternoon Session: 3. The Abuse of Trachelorrhaphy, by Dr. William R. Pryor, of New York. 4. Fatal Nausea and Vomiting of Pregnancy, by Dr. Edward P. Davis, of Philadelphia. 5. Myomectomy as a Substitute for

Hystero-myomectomy, by Dr. E. C. Dudley, of Chicago.

Second Day.—Morning Session: 6. President's Address: The Proper Position of Recent Surgical Methods in the Treatment of Uterine Fibroids. General discussion invited. 7. Discussion: Rupture of the Uterus; Palliative versus Surgical Treatment. Opened by Dr. Charles M. Green, followed by Drs. Malcolm McLean and H. C. Coe. Afternoon Session: 8. The Alexander Operation, by Dr. Clement Cleveland, of New York. 9. The Ultimate Results of the Treatment of Retrodisplacement by Pessaries, by Dr. Francis H. Davenport, of Boston. 10. The Influence of Laceration of the Perineum on the Uterus, and the Operation for its Repair, by Dr. W. Gill Wylie, of New York. 11. Retroperitoneal and Intraligamentous Tumors of the Uterus and Adnexa, by Dr. William H. Wathen, of Louisville.

Thibd Day.—Morning Session: 12. Inflammation of the Ureters from a Medical Standpoint, by Dr. Matthew D. Mann, of Buffalo. 13. The Influence of Minor Forms of Tubal and Ovarian Disease in the Causation of Sterility; by Dr. Thomas A. Ashby, of Baltimore. 14. The Results of Vaginal Fixation of the Stump in Abdominal Hysterectomy, by Dr. Henry T. Byford, of Chicago. 15. Symphysiotomy rersus the Induction of Premature Labor, by Dr. Charles P. Noble, of Philadelphia. 16. In Memoriam, Dr. Andrew Dunlap, by Dr. John C. Reeve, of Dayton. 17. In Memoriam, Dr. John M. Keating, by Dr. Edward P. Davis, of Philadelphia. Afternoon Session: Discussion before the Congress, 2 to 6 p.m. Subject: The Conservative Surgery of the Female Pelvic Organs. Referee, Dr. William M. Polk, of New York; co-referee, Dr. William Goodell, of Philadelphia.

There will be a general dinner to members of the Congress on the evening of the 30th, and a reception on the evening of the

31st.

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ORIGINAL COMMUNICATIONS.

CONTRIBUTIONS TO THE HISTOLOGY AND HISTOGENESIS
OF SARCOMA OF THE UTERUS,1

BY

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- I. MYOMA SARCOMATODES UTERI.
- II. SARCOMA MUCOSÆ UTERI ET MYOMA INTERSTITIALE UTERI.
- III. MELANO-SARCOMA CORPORIS ET CERVICIS UTERI.

(With six illustrations.)

It is only comparatively recently that sarcoma of the uterus has been recognized as a distinct affection, the first cases having been described little more than thirty years ago. But the very abundant literature upon the subject bears evidence of the interest which it has aroused among gynecologists as well as pathologists. Unfortunately the great majority of the articles

¹ From Prof. H. Chiari's Pathological-Anatomical Institute in Prague. Translated by the author from his article appearing simultaneously in the Zeitschrift für Heilkunde, Bd. xv., Hefte 2 und 3.

upon uterine sarcoma have been written almost exclusively from a clinical point of view, and have devoted very little attention to the pathological aspect of the affection; in many instances the diagnosis being made from the clinical history alone, without microscopical examination. The pathological articles, on the other hand, have usually had only a limited scope, and have generally been characterized by a lack of knowledge of the work done by others, the result being that many authors claim to have made discoveries for the first time which in reality had been described years before.

Before entering upon the main object of this article—the consideration of the transformation of myomata into sarcomata, and the description of several specimens from the museum of the Pathological Institute in Prague—we shall endeavor to give a brief review of the present status of sarcoma of the uterus and bring together some of the scattered statements concerning its pathology. It is more than probable that some of the growths described by Lebert as fibroplastic tumors of the uterus were in reality sarcomata. There is absolutely no doubt that the tumors described by Hutchinson, 52 Callender, 11 West, 102 and Paget sa "recurrent fibroids" were sarcomata; and the careful microscopical examination in Callender's case shows clearly that he had to deal with a spindle-cell sarcoma of the uterus with metastases in various parts of the body. The first case to be described as sarcoma of the uterus was a polypus, the size of a fist, which C. Mayer 55 exhibited before the Berlin Obstetrical Society in 1860, and upon which Virchower made the pathological report. He was soon followed by Langenbeck, 51 who reported a case of inversion of a sarcomatous uterus. The affection, however, did not assume a definite position in pathology until the appearance of Virchow's "Krankhafte Geschwülste" in 1865, in which he accurately described sarcoma of the endometrium and pointed out the possibility of the transformation of fibromata and myomata into sarcomata. In 1867 G. Veit⁹⁶ devoted a portion of a chapter in his work upon the diseases of women to the affection, and described three cases of his own, including one involving the cervix, the first on record. Beginning with the first volume of the Archiv für Gynäkologie, 1870, cases of sarcoma of the uterus were frequently described, and within the next five years nearly all the prominent gynecologists of Germany published cases of their own, among whom we may

mention Gusserow,²⁶ Hegar,³⁰ Chrobak,¹³ Spiegelberg,⁵⁰ Winckel,¹⁴ Leopold,⁵² Scanzoni,⁵¹ Ahlfeld,³ and Fehling.¹⁸ Hegar's ³⁰ article appeared in 1871 and was based upon nine cases. In it he distinguished between sarcoma of the endometrium and the uterine wall, and gave so good a description of their histology that the abundant literature of the past twenty years has added comparatively little to his excellent work. We shall not attempt to further review the literature of the subject, and would refer those interested to the recent article of Von Kahlden,³⁷ in which he refers to a considerable number of the reported cases.

Generally speaking, sarcoma of the uterus may be divided into two great groups: those affecting (1) its mucosa and (2) its parenchyma. Under these two main divisions there are, of course, numerous subdivisions, upon which we shall only briefly touch.

Sarcoma of the Endometrium.—Sarcoma of the endometrium is the most frequent of all forms of uterine sarcoma, and is usually limited to the body of the uterus. When affecting the mucous lining of the cervical canal it assumes a characteristic form, which we shall consider separately further on. Of one hundred and forty-four fairly accurately described cases which we have collected from the literature, at least forty-four, or about one-third, were limited to the mucous membrane lining the corpus uteri; and no doubt a considerable number, which we could not include among them on account of uncertainty as to their origin, also belonged in this category.

Sarcoma of the endometrium occurs either as a diffuse infiltration of the mucosa or as circumscribed growths which tend to assume a polypoid form. The former variety is the more frequent and may involve varying areas of the interior of the uterus, and is usually situated at or near the fundus. It leads to marked thickening of the mucosa, which often assumes a villous or jagged appearance, bleeds readily, and often presents large, necrotic areas. In most cases the process remains limited to the mucosa and does not invade the muscularis to any great extent, while in other instances it rapidly invades the uterine wall and leads to its destruction. According to the amount of fibrous connective tissue which they contain, the growths present on section a perfectly homogeneous or a more or less striated appearance, and may vary in color from grayish-white to light pinkish. These growths are frequently so rich in blood vessels

that they may be designated as hemorrhagic or telangiectatic sarcomata. Of course when there is marked necrosis the typical appearance disappears and gives place to a very soft, dark tissue which readily breaks down. When the growth assumes a polypoid form it not infrequently presents a markedly fibrous structure, and on casual examination may readily be mistaken for an ordinary "fibroid polypus."

Sarcoma of the Parenchyma of the Uterus.—Sarcoma of the parenchyma of the uterus likewise appears in two forms, diffuse and circumscribed, the latter being of far more frequent occurrence. Indeed, the former occurs so rarely that many authors do not mention it at all. It is due to the growth of the cells about the blood vessels or to the proliferation of the connective-tissue cells between the muscle bundles.

The circumscribed form, generally speaking, bears a marked resemblance to the myomata and gives rise to roundish tumor masses of various size and consistence, sometimes quite hard and again very soft. They are usually quite well marked off from the surrounding uterine parenchyma, except when they have attained a very large size, but are not usually surrounded by a capsule. Like the myomata, they occur either singly or multiple, and may be situated in any part of the uterine wall and so be either subserous, interstitial, or submucous.

The interstitial and submucous sarcomata have a marked tendency to make their way toward the uterine cavity and there assume a polypoid form, so that it is frequently impossible to decide whether a given polypoid sarcoma arises primarily from the parenchyma or mucosa. This is even more difficult during life than at the autopsy table, for in some cases a small portion of an interstitial sarcoma may perforate into the uterine cavity and hang down into it as a polypus, as in the cases of Orthmann, ⁶² Schultze, ⁵⁶ and Wyder, ¹⁰⁷ so that during life they would in all probability be diagnosed as arising from the mucosa.

It accordingly becomes evident that a very considerable number of cases cannot be definitely classified as arising either from the mucosa or the parenchyma of the uterus, and can only be said to arise from the corpus uteri. And consequently the statistical statements as to the frequency of the various forms of uterine sarcoma are open to serious doubt. Of course there can be no doubt in the cases in which the growth is surrounded

on all sides by uterine tissue or arises from the external surface of the uterus.

This form of uterine sarcoma, on section, presents a varying appearance, and may be either entirely homogeneous or contain large fibrous areas; the latter being of such frequent occurrence that these growths are generally spoken of as fibro- or myosarcomata, and are generally considered to be derived from the fibromyomata. Owing to necrotic changes they frequently present various colors and not infrequently cystic formations. Like the myomata, they may contain many dilated vessels and so assume a telangiectatic form, as in the cases reported by Johannovsky, st Jacubusch, sa and others; or may contain cysts of various sizes, the result of dilatation of the lymphatics, and thus give rise to lymphangiectatic sarcomata, which have been described by Fehling and Leopold 18 and Fenger. 19 And in some instances sarcomatous nodules may be found in the wall of a uterus whose endometrium is also sarcomatous, thus presenting a combination of the two forms.

Microscopically the uterine sarcomata do not differ greatly from sarcomata in other parts of the body, and may consist of round, spindle, or giant cells, or a mixture of the various forms.

It is generally stated that the round-cell sarcoma occurs most frequently; next in frequency is a mixture of round and spindle cells, while the pure spindle-cell sarcoma occurs comparatively rarely; and, as will be seen later, very little is said about giant-cell sarcomata.

It is interesting to note that several observers claim to have been the first to describe a pure spindle-cell sarcoma of the uterus. Thus, in 1874, both Leopold ⁵² and Grenser ²⁵ stated that they were the first to observe such a case, and as late as 1890 Beissheim ⁷ made a similar claim, when in reality the case of Callender, ¹¹ reported in 1857, was apparently the first of the kind to be recorded. Personally we have not been impressed with the great rarity of spindle-cell sarcoma of the uterus, and an analysis of the literature afforded us eighty-eight cases in which the form of the cells composing the growths was definitely described; of these, thirty-one were spindle-, twenty-seven round, and thirty mixed-cell sarcomata. We do not wish to claim that these figures represent the relative frequency of the various forms of sarcoma of the uterus, and we only adduce them to demonstrate that the spindle-cell variety occurs more frequently

than many writers suppose. We believe, however, that the round-cell variety is found most usually in sarcoma of the endometrium. We find here, as in sarcomata in other parts of the body, variations in the quantity of cells composing the growth, and in the arrangement of the intercellular tissue, which give rise to varying forms, which we designate as medullary, fibro, and alveolar sarcoma.

Sarcoma of the Cervix.—It is generally stated that sarcoma of the cervix occurs but rarely, and we have met with only one case in Baltimore, which we are unfortunately unable to report in this connection, as our records are not accessible at present. But we have been able to collect thirty-four cases from the literature in which the process was limited to the cervix, and several other cases in which both the cervix and body of the uterus were involved when the case was first seen. The cases of cervical sarcoma are readily divided into two groups, one of which appears to be very distinct, while the other, no doubt, includes several varieties of growths.

"Grape-like" Sarcoma of the Cervix.—From the mucous membrane of the cervical canal and the vaginal portion a growth may arise which closely resembles in appearance an hydatiform mole or myxomatous degeneration of the chorion.

Spiegelberg " was the first to direct attention to this class of growths, under the title, "Sarcoma colli uteri hydropicum papillare," when he described a case occurring in a 17-year-old girl, in whom he found the anterior lip of the cervix thickened and enlarged, and covered on its margin as well as its surface by a group of oval, yellowish-brown outgrowths, one to two centimetres long, which looked like transparent cysts, which were readily crushed when touched and contained a thick, sticky fluid. The anterior lip of the cervix was removed with scissors. Nine months later the girl returned with the entire vagina filled by a growth which resembled an hydatiform mole in appearance, which also arose from the anterior lip by numerous strong, thread-like pedicles. The mass was again removed and rapidly recurred; eventually the entire uterus was removed, and the patient died later from recurrence.

The tumors were examined by Weigert, who found that the cyst-like masses were covered by a single layer of cylindrical epithelium, and their interior composed of large round, spindle, and branching cells, which were separated from one another by

clear spaces which were traversed by fine threads. In these spaces lymph corpuscles were found, and between the cells thinwalled blood vessels. In the more compact portions of the growth, and in the pedicles of the "cysts," large cells without the clear ground substance were seen. The growth at first suggested a myxomatous sarcoma, but fresh specimens failed to give the characteristic mucin reaction with acetic acid. Spiegelberg accordingly concluded that the appearance was due to edema, the result of stasis in the numerous lymph sinuses of the cervix, and suggested for it the above-mentioned name.

The next year he reported a similar case, ⁹² and stated that one of his cases, which had been reported by Kunert, ⁹² was also of this variety. Similar cases were soon reported by several observers under various names. For example, Rein ⁷⁰ described a case as "myxoma enchondromatodes arborescens colli uteri"; Pernice, ⁶⁴ as "traubiges Myosarcoma striocellulare uteri"; and Mundé, ⁵⁷ as "a rare case of adeno-myxo-sarcoma of the cervix."

Pfannenstiel of in 1892 reported a new case, and in his excellent monograph collected the previous cases and suggested for the group the neutral name of "grape-like" sarcoma ("das traubige Sarcom") of the cervix, under which the various cases could be classified and note taken of their peculiarities. He agrees with the majority of observers that the growths in question are not myxomata or myxo-sarcomata, and believes with Spiegelberg 1, 2 and Weigert that they are sarcomata infiltrated with lymph and could be designated with propriety as "sarcoma lymphangiectaticum et hydropicum." He showed conclusively that the growth in his case arose from the superficial portions of the cervical mucous membrane, to whose papillary structure it owed its peculiar form; and in all probability that it was connected in its origin with proliferative changes, which he observed about the lymphatics and blood vessels.

Exclusive of his own case he found eleven other cases in the literature—namely, those described by Weber, 101 Kunert, 49 Kunitz, 50 two by Spiegelberg, 91,92 Rein, 70 Thomas, 95 Winckler 106 (Sänger), Pernice, 64 Mundé, 57 and Kleinschmidt. 44 We do not believe that the case of Kleinschmidt 44 should be reckoned among the "grape-like" sarcomata (traubige Sarcomata), for in its description he failed to mention that it had the appearance which is so characteristic of this form of growths, and he classed it himself among the angio-sarcomata. It is also doubtful whether

the case described by Winckel 105 as an "adeno-myxo-sarcomacervicis" belongs in this category.

On the other hand, it is quite certain that a specimen which Byford ¹⁰ obtained by vaginal hysterectomy in a woman aged 57 should be classed among the "grape-like" sarcomata of the cervix, and more than probable that the cases described by Ahlfeld ² and Smith ⁶⁰ in girls, respectively, 15 and 3 years of age also belong in the same group.

It is interesting to note that glandular structures were found in the cases of Mundé, ⁵⁷ Winckel, ¹⁰⁶ and Byford, ¹⁰ and that hyaline cartilage was found in the cases of Rein, ⁷⁰ Pernice, ⁶⁴ Kleinschmidt, ⁴⁴ and Pfannenstiel, ⁵⁰ and striated muscle in those of Weber, ¹⁰¹ Kunert, ⁴⁰ and Pernice. ⁶⁴ The presence of cartilage and striated muscle in these growths is of great interest in connection with their histogenesis; and, unless we accept the theories of Weber and Pfannenstiel, who regard them as the result of metaplasia of the sarcoma cells, they would appear to us to indicate a vitium primæ formationis (Keimverlagerung) in Cohnheim's sense.

It is also interesting to note that the great majority of these cases occurred in persons under 20 years of age or past the menopause, and only three in the intermediate period; and also that they all died from regionary metastases, with the exception of Byford's ¹⁰ patient, of whom it is only stated that she recovered from the operation; and that true metastases occurred only in the cases of Kunert ¹⁹ and Kunitz. ⁵⁰

Other Forms of Sarcoma of the Cervix.—Besides this well-defined group of "grape-like" sarcomata, we have found eighteen other cases in the literature in which there is no doubt that the affection arose primarily from some portion of the cervix, either from its parenchyma, or from the mucosa lining its canal, or from the submucosa of the vaginal portion. From the description of the cases it is not always evident from which structure they originated, but it is apparent that they do not constitute so definite a group of tumors as those just mentioned. Thus, for example, we find five cases in which it was said that the growth arose from the cervical canal with a broad basis, and usually from its mucosa—namely, those of Leopold, "Eunter," Dressler, and two of Kaltenbach." The cases of Veit, Hackeling, Beermann, Johnston, and Bommer had a polypoid form, were attached by a pedicle to some part of the

cervical canal, and usually protruded into the vagina with the pedicle passing through the os externum. In Scanzoni's et case the sarcoma arose from the anterior lip of the cervix, those of Kleinschmidt" and Rosthorn's from the posterior lip, and the two cases reported by Bommer' arose from both lips. The cases of Grenser 25 and Zweifel 109 presumably arose from the exterior of the cervix, and we are unable to give any particulars as to the case mentioned by Rogivue" on account of its meagre description. The microscopical examination of the various tumors makes their diversity even more apparent than their macroscopical appearance. Thus the specimens of Hackeling 29 and Johnston 35 contained glandular elements, and the latter was also said to be a melano-sarcoma. Leopold stated 52 that his tumor was originally a fibroma which had become sarcomatous. Kleinschmidt's " specimen was a spindle-cell angiosarcoma, while those of Grenser 25 and Zweifel 109 were spindleand round-cell sarcomata respectively; and in Rosthorn's case it was clearly shown that the primary growth arose from the submucosa of the vaginal portion.

Besides the varieties of sarcoma to which we have already referred, there are a considerable number of cases on record which are described as combinations of sarcoma with other tumor formations—as adeno-, carcino-, chondro-, and osteo-sarcoma.

Adeno-sarcoma.—When considering the "grape-like" sarcomata of the cervix we mentioned that several of the cases had been described as adeno-sarcomata; but it is evident that the presence of glandular structures in them is due only to the persistence of some of the original glands of the cervical mucous membrane, and therefore is of no great importance and does not entitle them to a separate classification.

On the other hand, Schmitt ** and Kay ** have described cases of adeno-sarcoma of the body of the uterus in which glandular structures were observed in the sarcomatous endometrium. From the description of their specimens it appears that they had only to deal with more or less normal uterine glands which had not yet been destroyed by the sarcomatous new growth; and Schmitt ** said of his two cases that "the glands were scarcely increased in number," which appears to us to be sufficient evidence that he did not have to deal with true adenomatous growth.

Carcino-sarcoma.—We cannot dispose of the carcino-sarco-

mata with the same ease, for their existence is vouched for by Virchow, ⁹⁸ Gusserow, ²⁷ Klebs, ⁴² and others.

In his "Geschwülste" Virchow "stated, without giving any particulars, that he had seen several cases, and that they were far more malignant than the ordinary varieties of uterine sarcoma; and lately, in the discussion upon the work of Abel and Landau, he reaffirmed his belief in the existence of this class of tumors. Klebs 2 also stated that they were of frequent occurrence, and Gusserow 2 said: "If the existence of a certain relationship between the round fibrosarcoma of the uterus and cancerous formations (Krebsentwickelung) cannot be denied, it is so much more frequent and marked in the second form of sarcoma of the uterus (sarcoma of the endometrium) that it has become doubtful whether one is justified in regarding it as a particular variety of tumor formation."

Cases of so-called carcino-sarcoma have also been described by Rabl-Rückhardt, 68 Rosenstein, 75 and Keller, 41 but it is not at all evident from the descriptions of Rabl-Rückhardt 68 and Rosenstein 75 that they had to deal with sarcomata; Rabl-Rückhardt's case, upon which Gusserow appears to base his belief in this class of tumors, being apparently a carcinoma of the corpus uteri which had grown down into a submucous myoma. In Keller's 41 case a tumor the size of a walnut arose from the posterior wall of the uterus, near the mouth of the right tube, which he stated presented a combination of a round- and spindlecell sarcoma with a carcinoma. This he regarded as a "secondary metaplasia" of a mixed submucous polypus, in which the carcinoma arose from the glands and the sarcoma from the interglandular tissue. We should hesitate to regard this case as a carcino-sarcoma; and it is evident that the term is as inapplicable to Rabl-Rückhardt's 58 case, admitting that it was a sarcoma, as the term carcino-fibroma or myoma would be to the not very infrequent cases in which carcinomata of the corpus invade fibromyomata which are situated in its walls. It is not improbable that some of the so-called carcino-sarcomata of Virchow, 97 Klebs, 42 and others were decidual-cell sarcomata (deciduoma malignum); and Keller 11 states that in three instances he has mistaken diffuse carcinoma of the endometrium for sarcoma, and Orth 50 says that endotheliomata of the uterus may assume an adenomatous form and readily be mistaken for carcinomata.

None of us who believe in the purely epithelial origin of carcinoma can admit the existence of transition forms between sarcoma and carcinoma, or vice versa. Nor do we believe that the so-called "sarcomatous degeneration" of the endometrium of Abel and Landau represents the initial stage in the development of carcinoma of the body of the uterus, or that it results from the same cause which produces the carcinoma of the cervix.

Chondro-sarcoma:—Chondro- and osteo-sarcomata may be the result of further changes on the part of the connective-tissue elements of the sarcoma (metaplasia), as well as accidental complications (vitium prime formationis).

A case described by E. Wagner ⁹⁹ as an enchondroma of the uterus in all probability was a chondro-sarcoma. It occurred in a woman, aged 55, whose uterus measured 5, 3.5, 3.5 inches in its several diameters. When cut open it resembled a thinwalled cyst, from whose inner surface many villous structures and nodular ridges arose. These portions creaked on section, and under the microscope "consisted of fibres and homogeneous bundles, which in many places went over into areas of hyaline cartilage. Between the fibrous bundles were many connective-tissue elements, spindle- and star-shaped," many of them being very fatty. The growth contained very few vessels. In each lung there were about fifteen nodules, which varied from a pea to a walnut in size and presented the same structure as the uterine tumor.

Geissler ²² also observed areas of hyaline cartilage in a spindleand round-cell sarcoma of the endometrium which arose from the posterior and lateral wall of the uterus in a woman 50 years old, and which gave rise to a tumor about 2.5 centimetres in diameter; and when considering the "grape-like" sarcomata of the cervix we stated that areas of hyaline cartilage had been found in the cases of Rein,⁷⁰ Pernice,⁶⁴ Kleinschmidt,⁴⁴ and Pfannenstiel.⁶⁵

As far as we can learn, no one has as yet reported an undoubted case of *osteo-sarcoma* of the uterus, the case reported by Newton ⁵⁸ under that name being merely a calcified subperitoneal fibromyoma which arose from the fundus of the uterus, weighed twenty-two pounds, and had existed for twenty-five years.

Up to the present it appears uncertain whether a case of true

melano-sarcoma of the uterus has ever been reported, and for the scanty references in the literature to this form of sarcoma we would refer to the remarks which follow our Case 3.

Sarcoma deciduo-cellulare.—During the past few years another variety of sarcoma has been added to the various forms which may affect the uterus, under the name of deciduoma malignum, or sarcoma deciduo-cellulare. This, which is the most malignant of all forms of uterine sarcoma, was brought to the attention of the profession by Sänger ** and Pfeifer, ** a pupil of Chiari, each describing a case. The cases were published within a short time of each other, but totally independently, Sänger's article appearing first. Both described similar cases, and both proposed to call them deciduoma malignum.

In Sänger's ⁷⁸ case a healthy young woman, 23 years old, had an incomplete abortion in the eighth week. She bled for four weeks after it, and when Sänger saw her she presented the symptoms of resorptive fever. The uterus was cleaned out and the hemorrhage ceased, but she did not regain her health. The uterus gradually increased in size, and soon a tumor appeared in the right iliac fossa. She developed cough, shortness of breath, became greatly emaciated, and died seven months after the abortion. At autopsy the uterus was found to be as large as if three to four months pregnant, and its walls occupied by four tumor masses of dark-red color and hemorrhagic consistence, the largest being five to six centimetres in diameter. The endometrium did not appear to be involved. There were metastases, of the same character as the original tumor, in the lungs, diaphragm, iliac fossa, and the tenth rib on the right side.

The microscopical examination showed that the metastases, as well as the original uterine tumors, were made up of areas of large epithelioid cells, which closely resembled decidual cells, and which were separated from similar areas by areas of hemorrhage. The cells themselves were separated by a fine reticulum. Throughout the specimen there were a large number of open spaces and many giant cells, so that it corresponded very closely in structure to the stratum spongiosum of the decidua. In some places these cells could be seen along the sides of the vessels and apparently taking the place of their endothelium, though it was impossible to decide whether they were derived from it or not. This relation of the growth to the vessels readily explained its hemorrhagic appearance as well as the

rapid formation of metastases. From the study of his case Sänger had no hesitation in considering it due to an abnormal proliferation of the decidual cells.

Pfeifer's 67 case was almost exactly similar, the woman dying five months after the first hemorrhage, with cough, emaciation, etc. From the posterior wall of the uterus a growth the size of a fist arose, which had the same appearance and microscopical structure as in Sänger's case. There were also metastases of a similar character in the lungs and vagina. Pfeifer at first believed that he had to deal with a carcinoma, but the discovery of a reticulum between the cells, and its general resemblance to the decidua, soon led him to recognize its true character and propose to call it a deciduoma malignum. Upon examining the specimen in Pfeifer's case Chiari immediately stated that three cases which he had described in 1877 12 as primary carcinoma of the uterus developing after the puerperium, with regionary and pulmonary metastases, were exactly similar, and that he had no hesitation in grouping the four cases together as malignant deciduomata.

At the Breslau meeting of the German Gynecological Society (1891) Sänger 79 read a paper upon this subject, and very properly showed that the term deciduoma malignum had not been happily chosen, and proposed instead to designate this form of growth as sarcoma deciduo-cellulare and thus give it its proper place among the sarcomata. In the discussion which followed P. Müller 56 reported another case without autopsy; and within the past year a number of cases have been reported by Gottschalk,24 Köttnitz,46 two by Schmorl,84 and one by Löhlein. 53 In the cases of Köttnitz, 46 Gottschalk, 24 and Löhlein 63 the diagnosis of deciduoma malignum was made intra vitam, and the uterus removed in the last two cases. Gottschalk's 24 patient, however, died seven months later with hemorrhagic metastases in various parts of the body, and up to the present Löhlein's 53 patient appears to be the only one who has not died from the affection.

In the cases of Gottschalk,²⁴ Köttnitz,⁴⁶ and one of Schmorl,⁸⁴ besides the typical decidual character of the growths, there also appears to be a sarcomatous change in the chorionic villi, which they consider the initial change, and from which they suppose the rest of the uterus is infected. Gottschalk ²⁴ proposed to call his case a sarcoma chorion-deciduo-cellulare; while Schmorl ⁸⁴

considers that they are closely related to the "destruirende Placentarpolypen" of Von Kahlden, ³⁶ Zahn, and others, and is doubtful whether they can be properly designated as sarcomata, and consequently proposes to designate the entire group as "blastoma chorion-deciduo cellulare." It would lead us too far, however, to attempt to discuss the many aspects of this variety of uterine sarcoma, and for their consideration we would refer those interested to Sänger's ** recent monograph upon the subject. There is no doubt that many cases of so-called hemorrhagic sarcoma belong in this category, and we have no hesitation in saying that Jacubusch's fourth case, and one described by Guttenplan as sarcoma hemorrhagienm, should also undoubtedly be classed among them. There is also but little doubt that some of the other cases of carcinoma of the body of the uterus, as well as those of Chiari,12 belong in this group; and, as we have already hinted, it is more than probable that some of the so-called carcino-sarcomata also belong in this category. When we consider the marked uniformity of the clinical history as well as the anatomical conditions in these cases, we must feel that we have to deal with the most interesting as well as the most malignant of the uterine sarcomata.

Metastases.—It is generally stated that metastases occur but rarely in the course of sarcoma of the uterus; and we may say that their occurrence is not general, death usually resulting from exhaustion rather than from the formation of metastases.

With one exception, as stated above, every case of decidual-cell sarcoma has proved rapidly fatal, and in every instance hemorrhagic metastases were found in the lungs and frequently in the vagina and other organs. In addition to the eleven cases of decidual-cell sarcoma we have found twenty-three other cases in the literature, including two cases of our own, in which true metastases were found at the autopsy; in nearly every case they were situated in the lungs and frequently in other organs, and in only two or three instances in the lymphatic glands.

The occurrence of metastases in organs far distant from the uterus, without involvement of the lymphatic glands, can only be explained by infection through the blood. Ample proof for this mode of origin is afforded by the cases of decidual-cell sarcoma of Sänger ⁷⁶ and Pfeifer, ⁶⁷ the cases which Pestalozza ⁶⁵ calls infectious hemorrhagic sarcoma, and the angio-sarcomata described by Kleinschmidt ⁴⁴ and Von Kahlden, ⁵⁷ for in all of

them sarcoma cells and tumor masses were observed within vessels which were apparently venous; and also by the cases of Katz ³⁰ and Geissler, ²² in which the pelvic veins were found filled by sarcomatous thrombi. In Katz's ³⁰ case definite sarcomatous thrombi were found in the pulmonary arteries, which gave rise to pulmonary metastases; while in Geissler's ²² case the process was still limited to the pelvic veins and had not yet led to their formation. These observations serve to demonstrate that Zenker's ¹⁰⁸ statement, that most sarcoma metastases are due to infection by the blood, applies as well to the uterus as to the other organs. The vaginal metastases which occur so frequently in the cases of decidual-cell sarcoma are far more difficult of explanation, and their mode of origin is still an open question.

Other Complications of Sarcoma of the Uterus.—Besides the formation of metastases, sarcoma of the uterus may give rise to several other complications, several of which are of interest and deserve a brief mention.

In several instances the sarcomatous new growths have perforated the uterine wall, thus allowing its necrotic contents to escape into the peritoneal cavity. This was noted in cases of Weber 101 and Dressler, 16 in which death resulted from acute peritonitis; and in the case of Jacubusch,33 which we have included among the decidual-cell sarcomata, death was due to hemorrhage from the rupture of a nodule on the posterior wall of the uterus. In the cases of Finlay 20 and Reunert, 71 the uterine growth perforated into the intestines; and in the cases of Gusserow 26 and Ritter 78 abscesses followed the perforation into the peritoneal cavity, which in turn ruptured through the abdominal wall. In several cases of sarcoma of the endometrium the internal os has become clogged up, thus preventing the escape of the contents of the uterus and so leading to the formation of a pyometra; this was noted in cases of Freund,21 Terillon, 93 and Kay, 40 and in our Case 3. In Terillon's 93 case the uterus contained seven litres of thick, dark fluid, and he mentioned a case of Péan in which the uterus contained fifteen litres of fluid. In several cases of sarcoma of the endometrium inversion of the uterus has been observed; this was noted in cases of Wilks,103 Langenbeck,51 Spiegelberg,90 Simpson,88 and Beissheim, and in most instances was mistaken for a sarcomatous polypus, whose removal was attempted with fatal result.

It is interesting to note that the cases of Spiegelberg ** and Simpson ** occurred in nulliparous women, among whom inversion of the uterus is practically unknown; and Simpson ** attributed it to loss of tone of the uterine musculature, resulting from its invasion by the sarcomatous new growth; and, lastly, in the cases of sarcoma of the endometrium described by Simpson ** and Coleman ** the process had extended directly into the tubes, the submucous tissue being the first to become affected.

Histogenesis.—The consideration of the histogenesis of sarcoma of the uterus will be simplified if we consider separately the forms occurring in its endometrium and parenchyma.

The comparatively simple structure of the mucous membrane of the uterus renders it evident that sarcoma of the endometrium can have only two sources of origin—namely, from the interglandular tissue and the vessel walls. There is no doubt that the great majority of sarcomata of the endometrium are developed directly from its connective-tissue cells; and it is only necessary to recall the histological appearance of some forms of interstitial endometritis to understand what a slight histological difference exists between the malignant and benign forms of proliferation of the connective tissue of the endometrium.

In a certain number of cases, however, the growth may originate by proliferative processes about the vessels. Indeed, Waldeyer 100 considers it the usual mode of origin for sarcoma in general, and it likewise undoubtedly applies to a certain proportion of cases of sarcoma of the endometrium. Pfannenstiel 100 is as yet the only observer to demonstrate this, though Amann 101 has recorded a case of endothelioma of the vaginal portion of the cervix which arose from the lymph channels in the lower layers of its mucous membrane.

As shown by Keller '1 and Von Kahlden, 37 sarcomata may originate in the lower layers of the endometrium and for a long time leave its superficial layers more or less intact, so that the entire surface of the growth may be covered by tissue containing glands.

The decidual-cell sarcomata likewise originate in the mucosa, but the consideration of their histogenesis would necessitate the discussion of the origin of the decidual cells themselves; and as those who have busied themselves with the study of the placenta have not yet decided whether they arise entirely from the connective-tissue cells or also in part from the vessel walls, we must leave their consideration to others.

As we have already stated, a large number of authors suppose that sarcoma of the parenchyma of the uterus is always the result of secondary changes in uterine myomata. Most writers upon sarcoma of the uterus have accepted this doctrine without hesitation, and consequently have entirely overlooked other modes of origin; and even those who have not accepted it in its entirety believe that it is the most frequent mode of origin, while the development of sarcoma from the normal constituents of the uterine wall is the exception. There is, however, no doubt that sarcomata may arise from the interstitial connective tissue and the blood vessels of the uterine wall, in which there is no sign of fibromyomatous formations.

As far as we can learn, Eppinger ¹⁷ is the only observer who has described sarcomata arising from the interstitial connective tissue of the uterine wall. In his case there were sarcomatous nodules of considerable size in the walls of the uterus, which he demonstrated were due to the proliferation of the interstitial connective tissue and the adventitia of the vessels.

Beermann 5 and Klebs 42 both state that sarcomata of the uterine wall may also arise from the blood vessels, but fail to give any histological details. The first actual proof for this mode of origin was adduced by Kleinschmidt,44 who described an angiosarcoma of the cervix, to which we have already referred. A soft, nodular tumor, the size of an orange, arose from the posterior lip of the cervix, which was removed and cauterized; recurrence two months later. It soon attained the same size and was once more removed. The microscopical examination showed that both tumors presented the same structure and were made up of large spindle cells arranged parallel to the vessels. He then says: "The sarcoma appears to arise from the blood and lymph vessels, which are very abundant in both tumors. Generally it appears to originate from the adventitia of the vessels, but in many places a distinct proliferation of the intima can also be observed, generally forming an opaque, tolerably broad, almost homogeneous layer about the vessel. In many places nothing more can be seen of the real vessel wall, as it is completely transformed into sarcomatous tissue."

Two years later (1893) Von Kahlden⁹⁷ also described a case of angio-sarcoma affecting the body of the uterus as well as the cervix, in which this mode of origin was also clearly demonstrated. The growths were composed of oval cells, which were

arranged concentrically about the vessels, thus forming small nodules, which by their coalescence gave rise to larger ones. He claims that he is the first to have observed such a case, and completely ignores the claims of Kleinschmidt's 44 case in this regard, of which he says: "The microscopical examination revealed a sarcoma, very rich in blood vessels, which was composed of spindle cells thickly crowded together." Orth 50 also states "that there are also sarcomatous tumors which resemble the carcinomata very closely, particularly certain adenomatous forms, but which must be classed among the sarcomata, as they are new growths which are due to a proliferation of the endothelium of the blood vessels, and accordingly must be designated as endotheliomata." There is also no doubt that sarcomalike growths may be derived from the muscle cells themselves. as was stated by Beissheim 7 and Pestalozza. 65 We shall, however, defer the consideration of this mode of origin until after the consideration of our Case 1.

The transformation of fibromata and fibromyomata into sarcomata, or their "sarcomatous degeneration," as most authors insist upon calling it, has long been a favorite theme with those who have busied themselves with the consideration of uterine sarcomata; and a very large number of authors do not hesitate to state that it occurs very frequently, and indeed is the most usual, if not the only, mode of origin for sarcoma of the parenchyma of the uterus. But, unfortunately, most of the arguments in favor of this mode of origin are based entirely upon clinical grounds or upon the mere macroscopical appearance of the tumors. It is generally believed, if a "fibroid growth" be removed from the uterus and be soon followed by another, that the second is necessarily a recurrence of the first, and such cases are generally regarded, without an attempt at microscopical examination, as conclusively demonstrating the malignant character of the growth and the transformation of a fibromyoma into a sarcoma; while the more natural explanation is that they are frequently totally independent of each other and the apparent recurrence is only a coincidence. In this connection it must be remembered that cases have been recorded by Klebs, 43 Krische, 47 and Orth 60 which tend to show that fibromyomata may recur in very rare instances, and even give rise to metastases, and still present absolutely no sign of being sarcomatous. Such observations, though extremely rare, show the

great need of caution in drawing conclusions in these cases, and demonstrate the absolute necessity of the microscopical demonstration of the sarcomatous nature of the growths before basing any arguments upon them. In some instances even the microscopical examination does not render an infallible verdict, as was demonstrated by a case in which Winckel 104 removed, in the course of a little more than two years, three tumors from the interior of the uterus, the first of which he regarded as a fibroma and the other two as round-cell sarcomata which were due to the "sarcomatous degeneration" of the base of the first. Two years later Schatz 52 removed a fourth tumor from the same patient, which he demonstrated was only an inflamed myoma, and clearly showed that Winckel 104 had regarded similar tumors as sarcomata. The subsequent history of the case demonstrated the correctness of Schatz's 82 verdict, for the woman was perfectly well three years after the removal of the third "recurrence."

Most of the authors who attempt to demonstrate this transformation by means of the microscope fail to show anything more than sarcomatous tissue adjoining myomatous. But, in our judgment, no one has as yet conclusively demonstrated the histological stages in this transition (*Uebergang*). It cannot be denied, however, that there is a great deal to be said in favor of its occurrence, and we do not care to be understood as attempting to throw doubt upon it, and in the remarks which follow we shall endeavor to prove that it does occur; but, in view of what has already been said, it is evident that it does not constitute the universal mode of origin for sarcoma of the parenchyma of the uterus.

The macroscopical resemblance of many uterine sarcomata to the ordinary "fibroid polypi" early suggested to the English observers that they were closely related to one another, and in designating them as "recurrent fibroids" they gave evidence of this belief; but since the demonstration of their sarcomatous nature the term has gradually fallen into disuse.

Virchow, so in his "Geschwülste," stated the possibility of the transformation of fibromata and myomata into sarcomata, and most of the earlier writers readily accepted his statement. Hegar, Leopold, and Chrobak soon published cases which they considered exemplified this transformation. To Hegar's cases we shall have occasion to refer later. Chrobak seported a poly-

pus which he had removed from the fundus of the uterus, which upon microscopical examination presented for the most part the typical structure of a fibroma, with here and there proliferative processes between its connective-tissue fibres. The cells were generally round and a few spindle-shaped, and several showed signs of cell division. But from his description they could just as readily have been areas of inflammation; and if they were sarcomatous, no clue was given as to their origin. And Leopold 62 contented himself with stating that there was no doubt that the specimen in his case was a young sarcoma which was due to the "degeneration" of a fibroma. Kunert, 49 in 1875, reported six cases from Spiegelberg's clinic, one of which was a "fibrosarcoma" of the uterine wall, upon the strength of which he stated that it and all similar growths were due to the "degeneration" of fibromata, though he did not attempt to adduce proof in support of his statements. Schröder, 85 in his text book upon the "Diseases of Women," also took a similar position, and in nearly all the subsequent articles both he and Kunert are referred to as having proved that all sarcomata of the uterine wall originate in this way, while in reality they simply expressed their opinion without attempting to prove its correctness. Rogivue,74 in his dissertation, stated that all parenchymatous sarcomata did not originate in this manner; and Raymond stated that the presence of sarcomatous and myomatous nodules in the same uterus, as in his ease, did not necessarily indicate that the former were the result of secondary changes in the latter.

In 1880 A. R. Simpson ** reported a large sarcomatous growth which he had removed from the interior of the uterus. On section it was perfectly homogeneous and of a light-pinkish color, except for a very few circumscribed myomatous nodules. The homogeneous portion consisted of spindle- and round-cell sarcoma, while the myomatous nodules presented the usual appearance. The growth recurred several times, but in none of the later specimens could any trace of myomatous tissue be found, so he had no hesitation in declaring that the entire growth represented a metamorphosis of a fibromyoma. Jacubusch ** and Kundrat ** also described a number of specimens which they considered proved the point in question; but none of them were carefully examined microscopically, and they based their opinions purely upon the macroscopical appearance of the specimens, some portions of which presented the usual

appearance of fibromyomata, while other portions appeared to be sarcomatous. Gusserow, in his article upon sarcoma of the uterus in Billroth-Lücke's "Handbuch der Frauenkrankheiten," stated that sarcomata of the wall of the uterus are usually the result of the "sarcomatous degeneration" of fibromata or myomata, but in a few cases they may be due to a primary sarcomatous infiltration of its parenchyma. The statements of Reunert," who reported three cases from Winckel's clinic in a very careful dissertation, are not much more satisfactory, for, in speaking of the "sarcomatous degeneration" of myomata, he said (page 35): "Perhaps one could also suppose, if one finds at the same time a fibroma and a sarcoma, that the latter tumor was not primarily malignant, but that it represented a degenerated fibroma. In any event this would explain the coexistence of a benign and a malignant new growth in the same organ."

Rothweiler 77 also reported a case in which Schröder performed vaginal hysterectomy. The uterus was as large as an ostrich egg, and from its fundus four polypoid growths, as large as a walnut, protruded into the uterine cavity. One of them was pedunculated and the others sessile; their surface, as well as the endometrium in the upper portion of the uterus, was sarcomatous. Microscopical examination showed that the bases of the polypi were composed of unchanged myomatous tissue, which was continuous with the parenchyma of the uterine wall, but that the portion which projected into the uterine cavity was the seat of a spindle- and round-cell sarcoma. He believed that he had to do with the "sarcomatous degeneration" of myomatous polypi, and considered that he was able to trace the transition from one tissue to the other. His description, however, is not very clear, and, in view of the fact that the rest of the endometrium was likewise sarcomatous, we are inclined to believe that he had to deal with a primary sarcoma of the endometrium which had invaded the surfaces of the submucous polypi, rather than with their "sarcomatous degeneration," somewhat as in our second case. He, however, regarded it as a striking verification of Schröder's view-"ein sprechendes Beispiel für die Schröder'sche Ansicht."

In 1887 Orthmann ⁶¹ exhibited before the Berlin Obstetrical Society a sarcomatous uterus which had been removed by Martin, and which was afterward described by Ritter ⁷² in a dissertation "Ueber das Myosarkom des Uterus." The patient

had noticed the growth for about ten years, when it rapidly became larger and necessitated the supravaginal amputation of the uterus. Recovery from operation; rapid recurrence in the peritoneal cavity; perforation of the abdominal walls by the growth; death six weeks after the operation. In the anterior wall of the uterus was a tumor, twenty centimetres in diameter, which was generally surrounded by a capsule. Upon its anterior surface were two smaller subperitoneal tumors; one, enclosed in a capsule, was a typical fibromyoma, while the other, which was in communication with the large tumor, was a round-cell sarcoma. Portions of the large tumor were distinetly sarcomatous, and other portions presented a typical myomatous structure. Ritter 78 considered the sarcoma the result of "degeneration of the myoma," and stated: In some portions, "between the connective tissue and muscle fibres one finds at first a few small round cells or small collections of cells. They become more and more numerous. Definite cell division may be observed. With the various methods of staining one can trace all its stages up to the formation of double nuclei. Finally we see the fibres pressed apart by masses of cells which occupy nearly the entire field" (page 34). In this case he clearly demonstrated proliferative changes in the interstitial portions of a fibromyoma, and so is in accord with Birch-Hirschfeld,* who states that sarcomata are always derived from myomata in this way.

The lymphangiectatic forms of sarcoma which were described by Fehling and Leopold ¹⁸ and Fenger ¹⁹ were believed by them to have been originally lymphangiectatic fibromyomata which later became converted into sarcomata; but they adduced no histological proof in support of their statements. Bommer, ⁹ Doran, ¹⁶ Dressler, ¹⁶ and Behnke ⁶ have also reported cases which they considered were due to the transformation of fibromyomata into sarcomata; but the microscopical examination showed only the coexistence of myomatous and sarcomatous tissue, without giving any definite information as to the transformation from one to the other.

The latest work upon this subject is that of Von Kahlden,³⁷ who, in the third case of his recent article, believes that he reports the first case in which the transformation of a fibromyoma into a sarcoma has been definitely proven.

In his case the uterus was 15.5 centimetres in length, with

walls from 2.5 to 3 centimetres in thickness. Its cavity was dilated, and three large, nodular, sessile tumors, which were apparently covered by endometrium, projected into it. The uterine walls were crowded with large numbers of round or oval tumors, up to a hazelnut in size, which are surrounded by capsules. Each tumor is composed of smaller nodules, which generally present a fibrous appearance. In the midst of the fibrous structure of many of the nodules are homogeneous areas. This formation extends from just beneath the mucosa to the outer part of the uterine wall, where it ceases and gives place to a layer of normal uterine musculature.

The microscopical examination showed that the glandular structure of the endometrium was preserved. In the portions of the growth nearest the muscularis he found microscopical nodules, which were surrounded by a thin connective-tissue capsule and sharply marked off from the surrounding tissue. In each of these he found two varieties of cells—one which stains lightly, and another which stains deeply; the former representing muscle, and the latter sarcoma cells. As the cavity of the uterus is approached the nodules become larger and visible to the eye, when they are found to be made up of a number of smaller ones, those nearest to the uterine cavity being frequently composed entirely of sarcoma cells. The tumors which project into the cavity of the uterus are made up of the larger nodules, and in places represent a diffuse sarcoma which has extended into the lower layers of the mucosa.

Von Kahlden ³⁷ considers that this specimen illustrates the very earliest stages in the formation of myoma of the uterus, and that in the very smallest nodules the first stages in the development of sarcoma may be observed. "This occurred in the smallest fibromyoma nodules, by the direct transformation of the muscle cells into roundish and then into short-oval cells which are rounded off at their poles." Nowhere were the muscle and sarcoma cells indiscriminately mixed together, but in each nodule there were definite areas of well-marked sarcoma as well as muscle. And finally he says: "The direct histological proof of the transformation of myoma into sarcoma is here presented for the first time."

After carefully considering Von Kahlden's ⁸⁷ cases we feel compelled to state that we do not consider that he has really demonstrated that the sarcoma cells were derived from the

muscle cells of the fibromyomata, as he believes. And we are unable to understand from the description of the specimen how he excluded the possibility of the connective tissue which exists between the muscle bundles having given rise to them, or at least having taken part in their formation. Certainly his Fig. 6 does not exclude this possibility, any more than it demonstrates that the sarcoma cells were derived from the muscle cells.

In view of these facts we do not believe that the proof adduced by Von Kahlden in support of the transformation of fibromyomata into sarcomata is at all convincing.

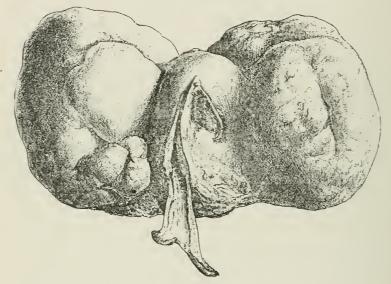


Fig. 1.—Lateral aspect of the tumor from Case 1, one-fourth natural size.

From the preceding review of the work upon this subject it is evident that fibromyomata may be transformed into sarcomata, but the demonstration of the initial histogenetic changes which occur in the process has yet to be adduced.

We shall now pass to the description of our new cases.

Case I. Sarcoma-like Myoma of the Uterus (Myoma sarcomatodes Uteri).—Museum specimen No. 4729. From the clinical history, for which we are indebted to the courtesy of Prof. Pibram, we extract the following: Augusta S., admitted to hospital February 4th, 1891; age 47; no children or miscarriages. Menses appeared in the sixteenth year, always regular; menopause four years ago; no loss of blood since. She was perfectly well

up to June, 1890, when she first noticed a gradual enlargement of her abdomen, which increased with great rapidity for the five weeks previous to her admission to the hospital. She did not complain of pain, and was able to go about her work until one week previous to entering the hospital. For the past few weeks there had been marked emaciation and edema of the abdominal walls, legs, and feet. The physical examination revealed no abnormality of the heart, lungs, or kidneys, and showed the abdomen filled by large tumor masses, which were diagnosed as malignant growths arising from the generative tract. Death seven weeks after admission.

Autopsy March 26th, 1891. Anatomical diagnosis: "sarcoma

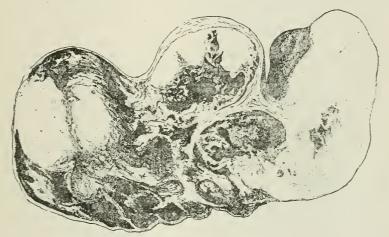


Fig. 2.—Sagittal section of the same.

fuso-cellulare uteri (e myomate); morbus Brightii chron.; hydrops et marasmus universalis." Except for the abdominal tumor the autopsy offers little of interest, there being only some old chronic nephritis and old pericardial adhesions. In the abdominal cavity there were over three litres of clear fluid. The intestines were forced into the upper and left portion of the abdominal cavity by a large tumor which entirely filled the pelvis and extended up into the right side of the abdominal cavity, and was adherent to the anterior abdominal wall, the omentum, and surrounding intestines.

The tumor (Fig. 1) measures thirty-six centimetres in its antero-posterior diameter, and is readily divisible into three parts: a central portion, about twelve centimetres in diameter,

which corresponds to the enlarged uterus, from whose anterior and posterior surfaces a large tumor arises, each the size of a man's head. As is seen from Fig. 2, which represents a sagittal section through the entire mass, the anterior tumor arises from the central portion by a thick pedicle, and thus presents a somewhat mushroom-like appearance. The posterior tumor is somewhat larger than the anterior, and is attached by a broad base to the posterior surface of the central portion. Extending from either side of the central portion are the apparently normal tubes and ovaries.

The surface of the central tumor is perfectly smooth, while the others are covered with thin adhesions and are studded with thin-walled cysts of various sizes, with clear or bloody contents, which are more abundant and of larger size in the posterior tumor.

The vagina is greatly increased in length, and from it a sound may be introduced for sixteen centimetres into the uterine cavity, which occupies the left side of the central part of the tumor, thus showing that its greater part was developed in the right wall of the uterus. The uterine cavity is lengthened, but not otherwise increased in size.

A sagittal section through the entire tumor mass (Fig. 2) shows that the anterior portion generally presents a firm, homogeneous appearance, with here and there, particularly toward its anterior border, areas of fibrous structure and small cysts with clear contents; while the other portions present many cysts of varying size, separated by dense grayish-white tissue and alternating with necrotic areas. As is seen from Fig. 2, the upper part of the central tumor mass is surrounded by a layer of unchanged uterine musculature, forming a capsule which in places is over one centimetre in thickness and is readily separated from the underlying tumor. The portions adjoining the capsule are dense and of a firm consistence, while the lower portion is composed of the necrotic areas and cystic formations which characterize the greater part of the growth.

Microscopical Examination.—Small portions were removed from various parts of the tumor and submitted to microscopical examination. Sections through the uterine cavity show that its mucous membrane is atrophic, with comparatively few glands and a slight increase of connective tissue, and presents the typical appearance of the endometrium after the meno-

pause. It is surrounded on all sides by unchanged muscularis, and it is only at a distance of a centimetre or more from its right margin that the sarcomatous growth makes its appearance. A casual examination of sections from various parts of the growth shows that we have to deal with a spindle-cell tumor with many necrotic areas; but a more careful examination shows that it presents many points of interest and gives us important information as to its mode of origin.

Sections through the upper part of the central tumor mass



Fig. 3 —Sarcomatous portion from the anterior portion of the same tumor, showing giant cells and reticulum. Zeiss Oc. 2, Obj. E.

show that the capsule is composed of perfectly normal uterine musculature, and the superficial portions of the tumor beneath it present for the most part the appearance of a myoma, with here and there sarcomatous areas scattered through it. The sarcomatous structure becomes more evident as we approach the central part of the tumor, where we find the large, necrotic areas and cystic formations. The sarcomatous tissue is composed of large spindle cells, which are thickly crowded together, with here and there large giant cells with from two to six or eight central nuclei. Where the cells are not too closely crowded

together we see that they are separated by a small amount of connective tissue (Fig. 3). The growth contains many vessels, the walls of many of the arteries presenting marked hyaline degeneration.

As the capsule is approached the cells become less crowded together, and gradually myomatous tissue appears. In places it appears quite probable that the sarcoma cells are derived from those of the myoma. For in some portions of the growth we see apparently perfectly normal muscle cells; then their nuclei become larger, some attaining two or three times their normal size, while in others karyokinetic figures are observed. Then the cells become greatly increased in number and much more closely crowded together, and the tissue assumes a dis-



Fig. 4.—Showing the transformation of muscle into sarcoma cells, from the median portion of the tumor. Zeiss Oc. 2, Obj. E.

tinctly sarcomatous appearance. The connective tissue which is between the muscle cells is seen to be continuous with that between the sarcoma cells. Fig. 3 gives a fair idea of this change. In its lower right-hand corner we see perfectly typical spindle-cell sarcoma with many vessels and marked intercellular substance, while in the upper right-hand portion of the figure we see apparently normal muscle cells with long (stäbchenformig) spindle-shaped nuclei; then the nuclei become larger and more oval, and the cells gradually increase in number, so that at last at one end of the field we see a typical spindle-cell sarcoma, while at the other we have apparently normal muscle. While the examination of portions from the central tumor

While the examination of portions from the central tumor renders it probable that the sarcoma cells are derived from the muscle cells, this mode of origin is rendered absolutely certain upon the study of sections from the anterior tumor. A short distance from the surface the growth presents the typical structure of a spindle- and giant-cell sarcoma (Fig. 4). Here we see large spindle and giant cells separated by a large amount of intercellular substance with many vessels. Immediately adjoining this, however, are areas in which the sarcomatous structure is not so well marked, and adjoining them areas in which we find only typical myomatous tissue. But in many places the transition is so gradual that it is absolutely impossible to say where the muscular tissue ends and the sarcomatous begins, and we only feel sure of ourselves when we are at one or other end of the process; and even in the otherwise normal myomatous

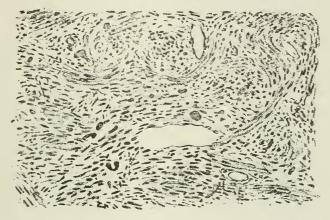


Fig. 5.—Myomatous tissue with enlarged cells and nuclei scattered through it, from the anterior portion of the same tumor. Zeiss Oc. 4, Obj. AA.

tissue we find some of the cells increased in size, and here and there a giant cell or a karyokinetic figure.

Fig. 5 represents a section from near the surface of the anterior tumor under a low power; and it is evident that here we have to deal with myomatous tissue, the only regard in which it differs from perfectly normal myomatous tissue being the presence of very large, deeply staining bodies, of various size and frequently of bizarre form, which are scattered through it. Fig. 6 represents an area from the above Fig. 5, more highly magnified. In its centre we see a large space lined by endothelial cells, from whose upper end extends a small capillary which contains several leucocytes. The surrounding tissue is composed of typical long, spindle-shaped muscle cells

which are separated by a considerable amount of connective tissue. Scattered through the section are large cells with nuclei of various sizes and shapes, some being hardly larger than the muscle cells, while others are five or six times as large. Several of them contain large vacuoles; in others the large nucleus appears to be going to break down into several smaller ones; and in others (not represented in the drawing) we find several smaller nuclei in a single cell body—in other words, typical giant cells. In some of the smaller cells karyokinetic figures are also observed. Accordingly there can be no doubt that the great part of the growth, spindle as well as giant cells, is derived from the muscle cells of a primary fibromyoma, while its connective-tissue elements do not appear to be involved in the process.



Fig. 6.—A portion of Fig. 2 more highly magnified. Zeiss Oc. 2, Obj. E.

Our specimen, judging from the history and microscopical appearance, was apparently originally a fibromyoma of the uterus, composed of a single interstitial and two larger subperitoneal nodules, which at a later period underwent the changes which we have just described. It accordingly represents the transformation of a primary fibromyoma into a sarcoma-like growth by the proliferation of its muscle cells, and presents a marked contrast to the case in which Von Kahlden ³¹ attempted to demonstrate a similar mode of origin, for in it he found only sarcoma cells adjoining muscle cells, but failed to demonstrate the transition of one to the other; and the fact that the sarcoma cells are not scattered through the smallest myoma nodules, but are grouped together and sharply marked off from

the adjacent muscle cells, speaks against such a mode of origin, instead of for it as he believes. And it is the converse of Ritter's ¹³ case, in which the sarcoma was in all probability the result of the proliferation of the connective-tissue elements of the myoma.

As the new growth in our case was derived from a proliferation of the muscle cells and not from the connective tissue, the question naturally arises, Are we entitled to class it among the sarcomata?

While there is no doubt that connective tissue and muscle cells are both of mesoblastic origin and consequently more or less closely related, there is equally no doubt that they represent essentially distinct tissues; and a priori we should hardly be justified in classing non-striated muscle among the connective-tissue elements, as we should be obliged to do were we to designate the growth before us as a sarcoma.

For these reasons, when we first became acquainted with the nature of our tumor, we sought to designate it by some term which would indicate its muscular origin and at the same time keep it distinct from the sarcomata, and we thought of calling it a malignant myoma, "myoma malignum," thereby briefly stating its origin and its malignant, proliferative properties; but upon further consideration we concluded to designate it as a "sarcoma-like myoma," or "myoma sarcomatodes," thereby expressing its relationship to both the myomata and sarcomata.

We do not consider this term as at all synonymous with the term myo-sarcoma. The former, we believe, indicates a sarcoma-like tumor derived from the muscle cells of a myoma; while the latter, according to the somewhat loose terminology in vogue among the sarcomata, only indicates a mixture of sarcomatous and muscular tissue and has no reference to its origin.

In connection with our specimen of "myoma sarcomatodes," two cases described by Pestalozza 55 as infectious hemorrhagic sarcoma of the uterus are of great interest, for in them he believed that he observed changes in the muscle cells more or less similar to those in our specimen. He described small hemorrhagic growths arising from the fundus of the uterus in two women, aged respectively 25 and 33 years, which rapidly led to death—in one case within six months—with hemorrhagic metastases in the lungs and vagina. The uterine tumor in each case was a round-cell sarcoma, which contained large numbers of

giant cells with usually not more than two nuclei. He believed that the giant cells were derived from the muscle cells of the parenchyma of the uterus, and in his Fig. 7 gave a drawing, illustrating the process, which is quite similar to our Fig. 4. He also found giant cells in the muscularis some distance from the sarcomatous growth, just as in our case; and in several instances they could be found making their way into the vessels or already within them, which readily explains the formation of metastases.

It is not clear from his description to what the round cells, which make up the greater part of the growth, owe their origin. He was inclined to believe that they were connected in some way with the decidua and were probably closely related to the decidual-cell sarcomata. After carefully considering his cases we believe that they are decidual-cell sarcomata, and the muscle changes, if they really occur, play only an insignificant part in the production of the growths.

Beissheim, a pupil of Rindfleisch, has also attempted to show that sarcomata may arise from the muscle cells. But his statements are based mostly upon theoretical considerations as to the relation between muscle and connective tissue, and the specimen which he adduces in their support does not appear convincing; but after our own experience we do not wish to deny that he observed such changes.

It is quite probable that Hegar *0 observed structures similar to those described by Pestalozza 65 and ourselves, for in his article upon sarcoma of the uterus he reported a case (Case S) in which he had removed a tumor weighing two pounds from the uterus of a woman aged 44 years. Fifteen months later there was a recurrence, the second growth exceeding the first in size. The first growth he considered a fibromyoma, and the examination of the second by R. Maier showed that it was a fibromyoma which differed in only one particular from the normal: "Als auffällig und nicht gewöhnlich ist nur ein Verhalten zu bemerken. Es finden sich an einzelnen Stellen und an diesen dann gewöhnlich zahlreich mitten in dem Zuge der Fasermassen und parallel mit diesen spindelförmige grosse Figuren, wie ungeheuer vergrösserte Spindelzellen. Sie hatten die grösste Aehnlichkeit mit den oft zu förmlichen Brutschläuchen umgewandelten Zellen des Bindegewebes bei lebhaften Proliferations processen oder bei Umwandlung von Bindegewebe in Knorpelgewebe. Die

Räume sind gefüllt mit einer Masse von Kernen, Körnern, Fettmolekülen. Sie sind oft ziemlich lang, 0.04 millimetre, und breit 0.0047." ¹

From the consideration of our case and the work of our predecessors, it is evident that fibromyomata may be transformed into sarcomata either by the proliferation of the connective-tissue cells between the muscle bundles (Ritter), or by the proliferation of the muscle cells themselves, or possibly by a combination of both processes, the first giving rise to ordinary sarcomata and the second to muscle-cell sarcomata.

In connection with the consideration of the "sarcomatous degeneration" of fibromyomata, our second case is of considerable interest—namely, a sarcoma of the endometrium which has invaded the surface of several interstitial myomata. Similar cases have been regarded by Rothweiler and others as demonstrating the transformation of myoma into sarcoma. We, however, regard the two processes as absolutely distinct, and consider the involvement of the myoma as purely accidental, it being entirely due to its situation just beneath the endometrium. Similar cases have been described by Martin, ⁵⁴ Dressler, ¹⁶ and others.

The case of Raymond ⁶⁹ and the first case of Von Kahlden, in which there was sarcoma of the endometrium with myomatous nodules in the uterine wall, and the case of Gottschalk, ²³ in which a subperitoneal myoma was associated with sarcoma of the endometrium, all serve to demonstrate that the involvement of the myoma in such cases is absolutely dependent upon its situation, and not upon any connection between the two processes.

CASE II. Sarcoma Mucosæ Uteri et Myomata Uteri.—Museum specimen No. 3381. Marie Z., age 52 years; no clinical history. Anatomical diagnosis: "Sarcoma uteri gangrenosum; ulcera necrotica in vagina; urocystitis catarrhalis; pyelonephri-

¹ As remarkable and uncommon only one peculiarity is to be noted. There are found in a few places, in the centre of the fibrous stroma and parallel with it, numerous large spindle-shaped bodies resembling immensely magnified spindle cells. These had a marked resemblance to those connective-tissue cells which sometimes change into regular breeding places (Brutschläuchen) at the time of active proliferation or during the transformation stage of connective tissue into cartilage. The interstices are filled with nuclei, granular masses, and fat molecules. They are sometimes quite long, 0.04 millimetre; their width is 0.0047.

tis lateris utriusque; pneumonia lateris dextri; septicemia; marasmus."

The vagina was 9.5 centimetres long. Its upper portion was smooth and of a dark color mottled with whitish spots, while its lower half was of a bluish-violet color. At the posterior commissure was an ulcer, 2.5 centimetres in diameter, with sharp margins and a shallow, yellowish base. Around it were several smaller ulcers, and at one side a prominence 5 by 3 millimetres arose.

The uterus measured 14.5 centimetres from the external os to the fundus, its greatest breadth being 11 centimetres. Under its serosa, near the attachment of the left tube, was a small nodule the size of a bean. At the fundus the uterine wall was 1 centimetre thick, its lower portion being of various thickness; for a nodular fibroid (?) tumor, 4 centimetres in diameter, occupied its anterior wall and extended down as far as the os internum. The surface of the tumor projected into the uterine cavity and presented a jagged, irregular, ulcerated appearance. The rest of the uterine cavity showed no trace of its normal mucous membrane, but presented an irregular, villous, necrotic surface, which was composed of a soft tissue rich in vessels, and which apparently extended down into the muscularis. In the centre of the posterior wall was another nodule, the size of a hazelnut, which appeared to be a fibroid. The cervix was intact, 3.5 centimetres long, and its walls 0.8 centimetre in thickness. The tubes and ovaries were normal.

Microscopical Examination.—Sections from various parts of the specimen clearly show that the sarcomatous new growth is limited to the inner surface of the uterus and extends only a short distance into its walls. It is probable that it originated in the mucosa, but, as no trace of the endometrium remains, positive proof for this mode of origin cannot be adduced.

Sections through the upper part of the large myomatous nodule and the adjacent portions of the uterine wall and cavity show clearly that the growth did not originate in the myoma, but only involved the portions of it which were adjacent to the uterine cavity, just as it did the other portions of the uterine wall.

The growth is a spindle- and round-cell sarcoma, which contains some giant cells and very few vessels, and is entirely limited to the inner surface of the uterus. In general its most

internal portions are necrotic and present nothing but cellular débris and the remains of nuclei. A little further removed from the interior of the uterus the tissue is well preserved and consists of spindle and round cells, closely packed together, with a very small amount of intercellular substance. The smallest cells are hardly larger than leucocytes. In many portions small bands of non-striated muscle may be seen scattered through it, which increase in number and size as the exterior of the uterus is approached, until at last we come to well-marked muscular tissue with only a few sarcoma cells scattered between its fibres, beyond which the uterine wall presents its normal appearance.

From the study of the specimen it is readily seen that the growth is invading the uterine walls from within outward, and in its course affects the myomata which happen to be in the uterine wall, as well as the perfectly normal uterine tissue.

The various myomatous nodules, where they are not invaded by the sarcoma, present the typical microscopical appearance and contain many areas of myxomatous degeneration.

And, finally, we desire to describe the following unique case

of melano-sarcoma of the uterus:

Case III. Melano-sarcoma Corporis et Cervicis Uteri.—Museum specimen No. 2717. R., aged 60 years; no clinical history. Anatomical diagnosis: "Melano-sarcoma uteri; sarcomata metastatica cerebri; marasmus; edema pulmonum." From the autopsy records we extract the following: "Dura mater pale; pia mater contains a considerable amount of serous effusion. Brain substance soft, doughy; cortex pale brown; medullary substance yellowish-white in color, with many blood points scattered through it. Scattered through both the superficial and deep portions of the cortex are numerous blackish nodules which are composed of a soft tissue."

The lungs normal except for edema. Heart normal except for a small excrescence upon one of the semilunar valves. Other

organs normal.

The uterus is converted into a tumor the size of a head. The cervical region was preserved and markedly dilated, and the cavity which resulted was filled by a collection of thick fluid. The anterior lip of the cervix was converted into a tumor the size of an orange. The tubes and ovaries were normal, and the lymphatic glands of the neighborhood were enlarged.

We shall now describe the specimen, which had been preserved

for some years in alcohol. The uterus has been cut open from its anterior surface, and, generally speaking, has an hour-glass shape, which is due to the presence of tumor masses in its fundus and cervix, while the intervening portion of its body remains intact. From the fundus to the lower margin of the cervical new growth the uterus measures seventeen centimetres, its greatest antero-posterior thickness being seven centimetres. The fundus is occupied by an irregularly-shaped tumor mass which completely fills the upper part of the uterus and extends downward for a distance of eight centimetres. It is generally of a dark color, in some portions being almost black and in others lighter in color. It is dense on section and presents a striated appearance. The tumor is very intimately connected with the uterine walls, but the distinction between it and the uninvolved musculature is very marked. The muscularis is most invaded at the fundus, where it does not exceed one millimetre in thickness; it then gradually increases in thickness, until at the lower margin of the new growth it measures one centimetre.

The entire cervical region is transformed into an irregular, globular mass, about seven centimetres in diameter, which has the same general appearance as the tumor in the fundus, but is of a lighter color. It protrudes into the vagina, but does not involve its walls; no trace of the cervical canal can be found within it; and as with the tumor in the fundus, so here, the distinction between the new growth and the muscularis is very marked. The fundal and cervical tumors are separated from one another by an area of perfectly intact uterine wall, which in its narrowest part has a vertical diameter of three centimetres. Upon the inner surface of this area there are numerous small depressions, the largest not exceeding one millimetre in diameter, which represent the openings of the uterine glands. From this a portion of the endometrium may be traced upward and be found to cover a considerable portion of the lower surface of the fundal new growth. The intact portions of the uterine wall vary from four to ten millimetres in thickness. The vagina is wide and smooth, and appears to be perfectly normal. The tubes are normal, and the ovaries small and atrophic.

Microscopical Examination.—Sections through the fundal tumor and the underlying portions of the uterine wall show that the tumor is sharply marked off from the uninvolved portions of the muscularis by a slight line of small-cell infiltration. The

most superficial portions of the tumor are necrotic, and nothing can be distinguished in it save fragmented nuclei and granular débris. In its deeper portions the structure is well preserved, and it is seen that it is composed for the most part of large spindle cells with very deeply staining nuclei. These cells vary considerably in size, but the smallest are at least twice the size of polynuclear leucocytes. In some portions of the tumor large numbers of giant cells are observed, which are of varying size and possess from one to eight or ten central nuclei. Occasionally they are so abundant that fifteen or twenty may be counted in a single field under the high power, while in other places it is necessary to search through several fields before finding one. Many of the cells, spindle as well as giant cells, are filled with yellowish-brown pigment granules, to which the growth owes its dark color. In some of the cells karyokinetic figures may be observed. As the muscularis is approached, bands of unchanged muscular tissue may be seen extending up into the tumor, and throughout its greater part very small bands of muscle may be found, indicating its invasion by the new growth. The tumor from the cervical region presents identically the same structure as that from the fundus. In no part of the tumor are there large quantities of blood vessels.

Sections through the uninvolved portions of the uterine wall show that its muscularis is perfectly normal and that very little is left of the endometrium. There is no trace of its superficial epithelium; there is some small-cell infiltration, and here and there small cavities which are lined by a single layer of cuboidal epithelium, and which represent all that is left of the glandular structure of the endometrium. The tissue is not well enough preserved to permit us to make any definite statements as to the probable histogenesis of the tumor.

As far as we can learn, this is the only well-authenticated case of melano-sarcoma of the uterus which has been recorded; for, while several cases may be found in the literature which may possibly belong among them, this is the only one which has presented the typical macroscopical appearance of a melano-sarcoma, and, after careful microscopical examination, been described as such.

We have been able to find in the literature only three references to this class of growths, and, as will be seen, none of them present the characteristics of the melano-sarcomata to the same

degree as our case, even admitting that they were melano-sarco-mata, which appears more than doubtful.

It is probable that some of the cases referred to by Klob ⁴⁶ as carcinoma melanodes, or "Pigmentkrebs," may belong in this category; but he stated that, as far as he knew, a primary case of melano-carcinoma of the uterus had never been described, and that "I know also of a case, observed in Rokitansky's Anatomical Institute in Vienna, of diffuse carcinoma melanodes in a markedly enlarged uterus, with a similar growth in both ovaries."

It is quite probable that this case was similar to our own, but in view of its scanty description we are not justified in stating that it was a melano-sarcoma.

The next reference in this connection is a case which G. W. Johnston ³⁵ reported as a melano-sarcoma of the cervix uteri. He removed from a negress, aged 40 years, a pear-shaped polypus, three-quarters of an inch in its greatest diameter, which arose from the cervical canal just above the os externum by a pedicle 1.5 inches long and as thick as a lead pencil. "The tumor was pear-shaped, with a smooth, glistening outer surface; it was hollow and contained about half a drachm of greenish-yellow fluid."

The tumor was examined by Dr. Gray, of the Army Medical Museum in Washington, who made the following report: "The outer surface is covered by a squamous epithelial mucous membrane, the central cavity being lined by a ciliated, columnar epithelium. The mass of the tumor is composed of large spindle cells and very delicate connective-tissue fibres, which in places form alveoli containing small round cells whose protoplasm is entirely obscured by pigment. In the neighborhood of the alveolar structures the blood vessels are in an embryonic state, in other places better developed, but nowhere are seen perfectly formed blood vessels. The tumor also exhibits a tendency to cystic degeneration; several of the cysts are lined by columnar epithelium, and the cavities filled by a finely granular mass containing a few epithelial cells. I would designate the specimen as one of melanotic alveolar sarcoma or of endothelial cancer undergoing cystic degeneration."

From the above description it is evident that the polypus in question cannot be compared with ours, and that even its sarcomatous nature is open to doubt.

The only other reference in this connection is to be found in

a dissertation by Seeger ⁵⁷ (1891), in which he reports five cases of sarcoma of the uterus from Gusserow's clinic. It is probable that his fourth case may belong in this category, though he does not describe it as a melano-sarcoma. Gusserow performed supravaginal amputation of the uterus in a woman aged 50 years. "The microscopical examination of the tumor shows areas rich in cells, with little intercellular substance alongside of fibrous portions, the cells exhibiting all possible gradations, from smaller and larger spindle cells to distinct giant cells with many nuclei and occasionally of a branching shape. Many cells contain a finely granular pigment, here and there fatty degeneration, but not marked enough to lead to softening."

The consideration of the references just adduced renders evident our statement that our Case 3 is the only well-described case of melano-sarcoma of the uterus which has as yet been recorded.

A point of considerable interest, in connection with the three cases which we have just described, is that they all contained considerable numbers of giant cells with from two or three to eight or ten central nuclei. Occasionally as many as fifteen or twenty giant cells might be counted under a single field of the microscope, under others only a few, and sometimes it was necessary to search through several fields to find a single one.

In view of their comparative abundance, however, in our cases, it is surprising to find that Rheinstein, in describing his case of giant-cell sarcoma of the endometrium, stated that he was the first to have observed giant cells in sarcoma of the uterus, and that Von Kahlden stated that they had been noted very rarely, and, with the exception of his case, had only been observed by Ahlfeld and Rheinstein.

On the other hand, exclusive of our cases we have found at least *eleven* other cases of sarcoma of the uterus² in which giant cells had been described previous to the appearance of Von Kahlden's ³⁷ article, and several others since then. Besides the two cases of Pestalozza ⁵³ and the cases of Hegar ³⁰ and Seeger, ⁵⁷ to which we have already referred, giant cells were found in four cases of Terillon ⁵⁴ and in one of Katz, ³⁹ not to mention the cases of Ahlfeld ² and Rheinstein, ⁷² to which Von Kahlden ³⁷ referred. Giant cells were also described recently by Coleman ¹⁴ in a case of sarcoma of the endometrium.

Strange to say, Sänger *0 is the only observer who mentions

their presence in the decidual-cell sarcomata, where one would naturally expect to find them. They were likewise observed in a case recently operated upon by Dr. Menge in the Leipzig Frauenklinik, the specimens from which he kindly allowed us to examine. We suppose that they occurred likewise in most of the other cases, but failed to be mentioned by the various observers.

It is evident, however, from our experience and from the facts which we have gleaned from the literature, that they occur much more frequently than is generally supposed; and now that we have directed attention to their more frequent occurrence, they should no longer be regarded as rarities and will be mentioned more frequently.

In conclusion, we desire to express our thanks to Prof. Chiari for the material upon which this article is based, and especially for his kindness in supervising our work. We also desire to express our indebtedness to Prof. Sänger, of Leipzig, for the use of his library, which he very kindly placed at our disposal.

LEIPZIG, March 15th, 1894.

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HEMATOMA OF THE OVARY.1

BY

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Abdominal surgeons not infrequently find in extirpated ovaries small blood clots varying in size from a pea to a hazelnut. The nature of these clots seems not very clearly understood. In most cases they are believed to be due to excessive hemorrhage into the Graatian follicle after rupture and the escape of the ovule. This view seems to me not tenable, because in not a few instances no rupture of the follicle has taken place. Besides, the corpus luteum, the successor of the ovule in the occupancy of the Graatian follicle, frequently contains no blood. Indeed, the view seems not irrational that hematoma of the ovary, no matter how small it may be, should always be regarded as a pathological formation, having no essential connection with the physiological process of ovulation.

Ovaries showing this condition are not rarely seen in abdominal section. I am informed that some surgeons simply extirpate the hematoma, stitch up the wound in the ovary, and drop the organ back into the pelvis. I may be permitted to express doubt whether any good purpose is served by this so-called "conservative" surgery. In all cases of this kind that have come under my observation there were either adhesions or displacements of the ovaries, which are among the recognized indications for removal of these organs. Dr. B. F. Baer, who is well known to be a very careful and conservative gynecologist, says in reference to these cases: "Diseased ovaries, when due to hemorrhage into the Graafian follicles to such an extent as to produce the condition known as ovarian hematoma, should be removed. They cause intense suffering and there is no other means of relief."²

Dr. Mary A. Dixon Jones, of Brooklyn, and Dr. Francis

3 New York Medical Record, September 6th, 1890.

¹ Read before the Baltimore Gynecological and Obstetrical Society.

² Proceedings of Philadelphia Obstetrical Society, June 12th, 1892.

Foerster' are of opinion that hematoma of the ovary is preceded by conditions termed by them "gyroma" and "endothelioma." Indeed, the latter writer, basing his opinion upon somewhat extended microscopical study of ovaries, normal and pathological, claims that "what previously was called a corpus luteum is invariably an endothelioma."

That the corpus luteum is an endothelial structure may be accepted without dispute, but that it should be called by a name heretofore applied to a malignant new formation, or that the consequences attributed by Dr. Foerster to this body, hitherto considered so innocent, really follow in many cases, is, I think, open to grave doubt. Chronic oöphoritis and peri-oöphoritis, endarteritis and sclerosis, are mentioned as histological findings, and pain and distress as clinical manifestations, due to ovaries undergoing these morbid changes.

Dr. Foerster connects the corpora lutea with the production of hematomata as follows: "In my own experience a large number of so-called corpora lutea of menstruation are endotheliomata of a pathological type. They grow, under the influence of chronic oöphoritis, without coming to a typical end, or gradually increasing in bulk and frequently leading to the formation of hematoma under incessant local and constitutional trouble."

It will, I think, be generally conceded that a hemorrhage into an ovarian follicle or into ovarian stroma does not take place when the ovary or the blood vessels preserve their normal structural integrity. Some nutritional change must have preceded the hemorrhage. It is most reasonable to believe that this change is in the blood vessels of the ovary. Whether this nutritional disturbance is due to new formations properly dignified by the names "gyroma" and "endothelioma," or whether it is simply the result of chronic inflammation, is a question that must be referred to the pathologists for further investigation. Rollin, who has recently made a study of ovarian hematoma, gives chronic oöphoritis as a local antecedent of the hemorrhage.

While the occurrence of small collections of blood in the Graafian follicles and minute extravasations in the ovarian stroma is not infrequent, the cases of so-called ovarian apoplexy, where the entire ovary is converted into a blood cyst varying

¹ American Journal of Obstetrics, May, 1892.

² "Des hémorrhagies de l'ovaire," Paris, 1889; Frommel's Jahresbericht, 1889.

from a billiard ball to a fetal head in size, are much more rare. The case presently to be described shows, however, that there is no essential difference between the two classes of cases.

The case is as follows: E. B., born in the United States, white, aged 21 years, single, was admitted to the Maryland Hospital for the Insane November 18th, 1893. Until a month before admission there had been no mental disturbance beyond hysterical attacks of varying severity, sometimes accompanied by convulsions. Her disposition was usually amiable, although she was of rather unstable temper. Her habits were always industrious. So far as ascertained there was no hereditary predisposition to insanity. The hysterical outbreaks were usually coincident with the menstrual periods, and have only been present for the past four or five years. Up to a year ago her physical condition was very good, but for three years she has suffered a good deal with pain in the iliac regions during the catamenia. About a year ago she consulted a gynecologist, under whose care she remained for several months with apparent improvement. During the last three or four weeks before admission a great change in her behavior was noticed. She became exalted, talkative, silly in conversation and action. When admitted she carried a large doll, which she caressed and talked to in a childish manner. She was neat and cleanly in dress and habits, and never noisy or maniacal. There was no apparent sexual excitement. At the end of two weeks she had lost all her delusions and was apparently entirely restored to her normal mental condition. At the approach of the next menstrual period she became hysterical, had several convulsions, foamed at the mouth, screamed, or lay with eyes staring or closed. During these attacks she was unquestionably conscious of what was going on around her. One night she intentionally ignited her clothing, but the fire was promptly extinguished and only a slight superficial reddening of small areas of the skin was produced. No serious results followed this attempt at selfdestruction.

After the period was over her normal mental condition returned, but she did not improve physically. She lost appetite, had frequent attacks of nausea, and became thin and anemic.

The pains in the iliac regions persisted and became especially severe on the left side. Occipital headache, rhachialgia, and

pains in the limbs, with attacks of nausea and vomiting, were also present.

On January 18th, 1894, a vaginal examination demonstrated an elastic swelling behind and to the left of the uterus, which was exquisitely sensitive to the touch. To the right there appeared to be an enlarged and prolapsed ovary. The uterus was adherent posteriorly, but somewhat movable.

The clinical diagnosis of adherent uterus, prolapsed ovary on the right and cystic ovary or ovarian abscess on the left side, was made, and an operation for the relief of these conditions recommended to her and her consent readily obtained. In-asmuch as she was, and had been for some weeks, entirely rational, and as she understood the consequences of the operation, her own consent was considered sufficient anthority to proceed.

Abdominal section was done on January 28th, 1894. Passing two fingers through the incision down to the fundus uteri, this was found adherent, the tubes and ovaries on both sides being also bound down by adhesions. After carefully separating the latter, the right ovary, enlarged to the size of an English walnut, was brought up, ligated together with the thickened tube close to the uterus, and removed. In place of the left ovary was a cystic tumor as large as a mandarin orange, which ruptured as it was brought out of the abdominal wound, and discharged a lot of softly-coagulated blood. My first thought was of an ectopic pregnancy, but, as an examination of the specimen will show, this was a mistake and an unjust suspicion. After the tube and remains of the cyst were ligated and removed, the peritoneal cavity was flushed out with hot distilled water and the abdominal wound closed with silkworm-gut sutures. drainage.

The subsequent course was uneventful, except that on the second day the temperature rose to 101° F. and the pulse to 102. After a purgative enema of magnesium sulphate and glycerin this slight disturbance vanished.

The stitches were removed on the seventh day, and the wound found dry and thoroughly united. Patient left her bed on the twenty-first day.

Since the operation the patient has suffered no pain, is cheerful and industrious, not hysterical, and has gained flesh. Her mental condition is apparently normal. The patient was discharged, entirely recovered, March 15th, 1894.

The walls of the blood cyst are apparently composed of ovarian stroma. The tube is somewhat thickened, but contains no pus. The right ovary, on section, shows two blood clots, about the size of hazelnuts, occupying unruptured Graafian follicles. This case seems to show on the two sides examples of two forms of ovarian hematoma, which are, however, rarely associated in the same individual. If any conclusion may be drawn from a single case, it is that the rather common follicular hematoma and the infrequent ovarian apoplexy are identical in origin.

Winckel 1 refers to three cases of follicular hemorrhage into the ovaries after severe burns. The burn which my patient received about a month before the operation might be considered suggestive if it had been more serious. The firm adhesions were, however, evidence of a longer duration, at least of the local inflammatory condition.

Of the more recent cases reported is one by Doran,2 who considered it a hemorrhage into the ovarian stroma from rupture of a follicle. The cyst wall was one-eighth of an inch thick and consisted of ovarian stroma. Mundé's briefly reports a case of hematoma of both ovaries, one being the size of an orange and the other of a hen's egg. Montgomery,4 in commenting on this case, refers to a similar one under his observation. Duncan 5 reports a case in which there was hematosalpinx in connection with the ovarian hematoma. The history of the case suggests ectopic pregnancy, which seems, however, to have been excluded.

I am reminded here of a case which I saw about twelve years ago in the service of the late Dr. A. F. Erich at the Maryland Woman's Hospital. The patient was a white spinster, 35 years of age. The tumor, supposed to be an ovarian cystoma, was about the size of a fetal head, and, when brought to the abdominal incision and tapped with the trocar, thick, black blood was evacuated. The patient died of purulent peritonitis about the fifth day. At the autopsy a perforation of the rectum was found. How this was produced could not be cleared up; it may have been torn through in separating adhesions.

¹ "Frauenkrankheiten," 2te Aufl., p. 700.
² Transactions of London Obstetrical Society, vol. xxxii.

³ AMERICAN JOURNAL OF OBSTETRICS, June, 1890, p. 638.

⁴ Sajous' Annual, 1891, 11, G. 46.

⁵ Transactions of London Medical Society, 1892; Sajous' Annual, 1893.

A number of apparently similar cases, in which the cyst ruptured and caused death from septic peritonitis, are recorded by Bernutz and Goupil.¹ Most of these cases were probably extrauterine pregnancy.

An ovarian hematoma may rupture and give rise to a pelvic hematocele. In other cases the bleeding may continue and the patient die of the hemorrhage. The most serious danger from rupture is, however, peritonitis or sepsis. Joseph Price claims that the contents of an ovarian hematoma are usually exceedingly virulent, and liable to cause septic peritonitis if the blood cyst is allowed to rupture within the peritoneal cavity.

The diagnosis of ovarian hematoma cannot be definitely made before abdominal section. Even when rupture occurs and a hematocele is formed the diagnosis rests between several conditions, often differentiated with the greatest difficulty, even after operation.

The only rationally indicated procedure is removal of the affected organ by abdominal section.

AN INTERESTING CASE OF VAGINAL HYSTERECTOMY, WITH REMARKS ON CARCINOMA UTERI.

BY

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EVERY case in which the diagnosis of this fearful disease is clearly established, and in which life has been saved or even prolonged by operation, should be reported, in order to encourage its victims to submit to early operation. Though the view that cancer is primarily a local disease may be disputed, it is established beyond question that the earlier free excision is resorted to the greater the probability that it may not return. In mammary cancer, where, in the early stages, not only the gland itself but a doubtful area about it is freely excised, there has been no recurrence in some cases for many years.

The requirement for early operation in uterine cancer is even more urgent, and particularly when it begins in the cervix, from

¹ "Diseases of Women." Sydenham Soc, Transl.

which it quickly spreads so as to involve the pelvie lymphatic glands, the vagina, the rectum, and the bladder. When the point of origin is in the body of the uterus itself, it may remain a much longer period confined to the organ. This may be accounted for possibly by the fact that the body of the uterus is not in such immediate vascular connection with its surroundings as the cervix, or by the fact that the more fatal types of cancer rarely begin in the body of the uterus. Whatever may be the true explanation, the evidence furnished by practical experience shows that it does not so soon infiltrate adjacent structures.

The case which I am about to relate came first under observation in November, 1889. Mrs. I., an apparently healthy woman (nullipara) about 60 years of age, suffered during the previous summer from a slight vaginal discharge which she thought was a simple leucorrhea. Finding that it continued and caused irritation and soreness in the vagina, and seeing occasional traces of blood in it, she applied for advice. She had never borne a child, and had suffered more or less all her married life from vaginismus. This was aggravated by the acrid discharge, so that an examination was difficult and unsatisfactory. However, it disclosed the fact that pus came from the os uteri, which was excoriated and extremely sensitive. There was no induration of the cervix, nor could I distinguish any peri-uterine tenderness. Owing to the firm, thick abdominal walls the outline of the uterine body could not be mapped out. Having accomplished nothing by the simple measures resorted to, I obtained permission to examine her under anesthesia the following May.

Dr. Howitt assisted me in dilating the cervical canal very freely, and while using the curette a stream of thick pus came away from the uterus. Portions of tissue removed by the curette did not disclose evidence of malignant disease on careful microscopical examination. After swabbing the cavity with pure carbolic acid it was packed with iodoform gauze. This was followed by temporary cessation of the discharge, but in the following September I was compelled to repeat the dilatation with free use of the curette.

In the early part of 1891 she consulted Dr. Gardner, of Montreal, who, after a careful examination under ether, expressed to her friends the opinion that she had some form of malignant disease of the uterus. Throughout the year the symptoms were

kept well under control by occasional resort to the curette and by frequent use of the douche.

In January, 1892, I could easily distinguish that the cervix was becoming of woody hardness, and I then urged early hysterectomy—the patient being perfectly willing to accept all the risks properly belonging to the operation. On again consulting Dr. Gardner, I regret to say that he did not concur in my views as to the advisability of operation, and definitely declined to perform hysterectomy, believing that it would only hasten her death.

In April following she saw Dr. H. C. Coe, of New York, who, although he regarded the case as a doubtful one, decided, with the full approval of the patient, to attempt a radical operation. Vaginal hysterectomy was performed by him on the 23d of that month. She recovered without febrile disturbance, but developed mania, which continued in varying intensity for nearly two months. During the second week after the operation a small recto-vaginal fistula was found high up in the vagina. Gas and fluid feces passed through it into the vagina, and it continued to give her annoyance until it was closed by operation thirteen months after the hysterectomy.

In January and February, 1893, she suffered from a very severe attack of erysipelas, which began on the external genitals and extended over the whole body. The temperature continued very high $(103\frac{1}{2}^{\circ})$ to $104\frac{1}{2}^{\circ}$ for about ten days, and there was delirium, so that the patient was in a very critical condition. Within five weeks it disappeared and she slowly recovered. Her general health has steadily improved, especially since the fistula was successfully closed two months after her recovery from erysipelas. When last seen she was quite well and without any sign of recurrence of cancer. (She was examined by Dr. Coe a few weeks since and was found to be absolutely free from local trouble.)

This interesting case will well repay a more careful study in detail.

1. The Diagnosis.—It was difficult to make a correct diagnosis early in the case. The general health of the patient continued good. She had no pain. There was no sign of cachexia. The cervix presented nothing abnormal. There was a purulent discharge which excoriated the os and made the vagina very irritable, and at times there were traces of blood in it, but it was

not offensive at any time. The portion of tissue removed by the curette under the microscope proved to be only normal tissue. Of course, in a woman ten to fifteen years past the climacteric, there is strong ground to suspect malignant disease when uterine hemorrhage occurs, even occasionally. Though I had this in mind, the patient's general health remained so good, with entire absence of fetor in the discharge, that it was hard for me to believe that I was dealing with a malignant neoplasm. However, there can be no doubt that it was malignant from the outset.

- 2. The Advisability of Operation.—Against operative interference there were many weighty arguments. The condition had existed more than two years. The utcrus was not absolutely fixed, but it could be moved only to a very limited extent. Peri-uterine indurations could be felt. It seemed not unreasonable to suppose that these were due to extension of the disease. Under all the circumstances, leaving out of mind the immediate danger of operation, it was certainly open to question whether operative interference might not hasten her death. Dr. Gardner decided definitely and strongly against operation. Dr. Coe regarded the indurations in the broad ligament as probably inflammatory products and not cancerous infiltrations, and this had some weight in his deciding to operate. But even during the operation he felt so much doubt as to their true character that he regretted his decision.
- 3. The Method of Operation.—In doing the hysterectomy by the vaginal method considerable difficulty was experienced, due chiefly to the small, atrophied vagina, but in part also to the large size of the uterus and the condition of the cervix, which was nothing but a shell, and so fragile that, in attempting to draw the uterus down, it tore away. Besides, firm adhesions were met with behind the uterus and involving the left tube and ovary. The broad ligaments were first temporarily secured with clamps, then ligated and the clamps removed. The tubes and ovaries, which were atrophied, were tied off after the uterus had been removed. The stumps of the broad ligaments were brought down into the wound and covered with strips of gauze in the usual manner, after which the vagina was tamponed. The intestines did not appear in the wound.
- 4. The Mental Condition.—For six weeks after the operation the patient manifested intense mental excitement, which began

as soon as she recovered from the anesthetic. This was accompanied by a very rapid pulse (120-140), but there was no elevation of temperature. She first showed a tendency to melaneholia, which soon passed into acute mania. Part of the time it was almost impossible to keep her in bed, or to make the necessary changes in dressing the wound, or to administer the douche. Though there was no evidence of renal disease, in the fourth week she sank into a semi-comatose condition which made it extremely difficult to administer nourishment. She suddenly rallied and began slowly to improve. The treatment throughout consisted in careful feeding, the necessary use of sedatives and hypnotics, and the daily use of the douche and the tampon.

- 5. The Specimen.—When removed the entire uterus was found diseased. The cervix was a mere shell, possibly in part as a result of the free use of the curette in the repeated operations she had undergone, but chiefly from erosion by the disease. The whole cavity was involved, the walls being nearly perforated in several places, making it very probable that cancer had already extended beyond the uterus.
- 6. The Recto-vaginal Fistula.—Its situation was high up in the vagina, within an inch of its upper extremity. Flatus and fluid feces came through it into the vagina. Under a varied treatment, douching, iodoform tampon, stimulation, etc., it obstinately refused to heal. The tissues about it felt slightly indurated, were always painful, and bled when touched. These features, and the fact that an undoubted cancer had been removed from the same region of the body, created a strong suspicion, amounting almost to a certainty, that this obstinate little ulcer was now affected with cancer. This view was fully shared by several physicians who were conversant with the case.
- 7. The Attack of Erysipelas.—This occurred nine months after the operation, the external genitals being the point of origin. The whole duration of the attack was nearly five weeks, and for half that period there was persistent delirium and very high fever.
- 8. In view of the claims put forth that erysipelas has some curative influence over sarcoma and cancer, it is quite in place to ask what effect this severe attack of erysipelas had in regard to the immunity which this patient enjoys from recurrence. Two years are now past since the operation and there is no sign

¹ Coley, American Journal Medical Sciences, May, 1893.

of recurrence. The patient is in good general health. She has no discharge and no pain. The small fistula, which during nine months obstinately refused to close under very varied applications, was successfully closed, two months after recovery from erysipelas, by suture after paring the edges. It healed kindly, so that it is now difficult to find where it was. The operator who removed the cancerous uterus found so much disease that he predicted early recurrence. The fistula manifested very suspicious features, and for months was regarded as a cancerous ulcer. There is no proof that it was, and consequently no proof that the erysipelas had any effect whatever. Yet it may have transformed the obstinate cancerous ulcer into a simple one kindly disposed to heal, and to it may be due the happy immunity which I trust the patient may continue to enjoy.

CESAREAN SECTION,1

BY

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There is still some difference of opinion as to when Cesarean section should be performed and if it should take the place of craniotomy. Although I am an abdominal surgeon, so-called, still I cannot agree entirely with those who say that craniotomy is never justifiable. It seems to me that it altogether depends on circumstances, and that no definite rule can be laid down, but that every case must be weighed and decided by taking everything into consideration. In my experience craniotomy is not so dangerous to the mother as Cesarean section.

Formerly I had to perform craniotomy frequently (perhaps a dozen times), and fortunately the mothers all recovered. That was before the days of Tarnier forceps; since then, with a large consulting practice, I think that in my last thousand cases of continement, which included three hundred forceps deliveries, I performed craniotomy only two or three times. This shows

¹ A paper—one of a symposium on Cesarean section, craniotomy. symphysiotomy—read before the Michigan State Medical Society, May 2d, 1894

that with the use of improved forceps craniotomy is seldom required, and when it is required it is often on a dead child.

I have taught students and have made for myself the following rule: If the antero-posterior diameter is three inches or more, the performance of craniotomy adds but slight additional risk to the mother over any severe forceps delivery. Hence, in cases with such a diameter, I think craniotomy is justifiable.

If, after consultation, it has been decided that either craniotomy or Cesarean section must be performed, there arises a question: the desire or the wish of the mother. If she has had a number of living children and the pelvic deformity came on since, I think craniotomy ordinarily is the proper thing, as it is less dangerous to the mother than Cesarean section. But if the woman has had a number of stillborn children, perhaps has had craniotomy performed a number of times, and she desires a living child, I think that Cesarean section is the proper thing.

There comes another question, and that is the environment. If a woman lives out in the country, a great distance from her physician, with no proper assistance and no facilities for antiseptic surgery, it seems to me perfectly reckless for any one to perform Cesarean section. Or if the woman has been in labor for a long time and repeated efforts have been made to deliver with instruments, then also the records show that Cesarean section is accompanied by a large mortality, and I think under such circumstances is not justifiable, as a woman stands a far better chance with craniotomy.

All these views, remember, are based on the above statement that the antero-posterior diameter is three inches or more, and I think that we must there draw a strong line of distinction.

If we now consider what I would call a second class—that is, where the antero-posterior diameter is less than three inches—then we must take an entirely different view of the subject. In such cases craniotomy is a very formidable operation, and not only craniotomy is required, but the evisceration and the removal of the child piecemeal. This kind of delivery is accompanied by great mortality to the mother—greater, I think, than Cesarean section. Therefore I would say that in cases of a diameter of less than three inches Cesarean section should be the rule.

Let me here strongly emphasize that such cases should not be interfered with, nor any effort made to deliver, but all prepa-

rations be made for a section, so that when the proper time comes it may be promptly performed.

There arises another question: Should the classical Cesarean section or the Porro-Cesarean section be performed? In the first operation the danger to the mother is certainly greater, as in the second a complete removal is an absolute safeguard against puerperal fever. Still, the main point is that in the one case the woman may become pregnant again, and in the other not; and it seems to me that here also every case must be judged by itself, and often should be determined by the patient. If a general practitioner is alone or has only one assistant, it is certainly much easier to perform the Porro operation by clamping the uterus than the slow and painstaking work required in carefully sewing the cut in the uterus in the classical section.

While both mothers and both children are living after my two Porro-Cesarean sections, I often ask myself whether it really was right to remove the uterus in either of the cases, although the immediate danger to the mothers was far less.

In the present state of my knowledge I am not prepared to decide definitely whether the one or the other variety of Cesarean section should be performed, but am inclined to leave that to circumstances.

To recapitulate, I believe:

- 1. That in certain cases with an antero-posterior diameter of three inches craniotomy is justifiable.
- 2. With an antero-posterior diameter of less than three inches Cesarean section should be performed.
- 3. In the latter case sometimes the classical, sometimes the Porro-Cesarean section should be preferred.

ECTOPIC GESTATION, WITH REPORT OF CASES.¹

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Probably no complication or abnormality of pregnancy has been less recognized and more difficult to successfully treat than

¹ Read before the South Kansas Medical Society at Wichita, May 1st, 1894.

ectopic gestation, and it is only within the past few years, since abdominal section for all obscure conditions within the abdomen and pelvis has been the rule and practice, that this form of pregnancy has been frequently recognized. Its etiology is previous disease of the uterus and tubes, whereby the uterus is fixed in position and the ciliated epithelium of the Fallopian tubes is destroyed. Lawson Tait' very aptly says "that the uterine cavity is the only proper place for impregnation to occur, and that the normal action of the cilia of the epithelium lining the Fallopian tubes is to prevent the spermatozoa from entering them and to facilitate the passage of the ovum to its proper nest." With such views it is easy to understand the cause of tubal pregnancy: desquamative salpingitis could at once put the mucous lining of the tubes into a condition exactly similar to that of the uterus, and in that condition access of spermatozoa would be possible, retardation of the ovum in the tube would be inevitable, and its immediate adhesion to the tube wall after impregnation would be as easy and as likely as its occurrence in the uterus.

The large majority of these cases have a history of previous pelvic disease and of prolonged sterility. Authorities usually give a number of varieties of ectopic gestation, but, accepting Tait's views relative to the physiological process of impregnation and the normal place for fertilization of the ovum, I also accept his views in regard to varieties of ectopic gestation—viz., that all cases are primarily tubal, and that the other varieties develop from this by a primary rupture.

The symptoms of ectopic pregnancy are extremely vague. The patient may present all the symptoms of an ordinary pregnancy and not suspect an abnormal condition. On the other hand, any of the usual symptoms may be absent. Menstruation may at first disappear and then return; and again there is a continuous flow, amounting to even menorrhagia. The symptom which usually attracts attention is severe colicky pain, felt at from the third to the sixth week; this may be more or less continuous, and is frequently attended by a dark bloody discharge from the uterus. "A vaginal examination at this time reveals some enlargement of the uterus with displacement of the organ forward and lateral, and exquisite pelvic tenderness, and at the point of greatest tenderness a soft, boggy mass is found. This mass or tumor may easily be mistaken for either hydro-,

^{1 &}quot; Diseases of Women and Abdominal Surgery."

pyo-, or hematosalpinx. The diagnosis between extra-uterine pregnancy and pregnancy in a rudimentary horn of the bifid uterus is impossible " (Pozzi)."

The later course of ectopic gestation (after the second or third month) depends entirely upon the direction of the primary rupture. If the tube rupture into the peritoneal cavity fatal hemorrhage will almost inevitably ensue; if, however, it rupture into the folds of the broad ligament the blood is confined by the folds and a clot is formed and the hemorrhage stopped. Here the fetus may continue to develop, even to full time, or the sac may rupture, giving another variety of pregnancy governed by the direction of the rupture.

"Every stage of the fetal development is attended by the most formidable danger. Hemorrhage is the great danger in the first, peritonitis and septicemia in the second, and internal suppuration may occur even after the ovum has been transformed into an apparently inert mass" (Pozzi).

The treatment of ectopic gestation is either surgical by laparatomy, or destruction of the fetus by electricity or by morphia injections. Pozzi says that the question of therapeusis is simple; it is reduced to the mere question of operative opportunity and of the technique to be adopted in the extirpation of the fetus. Lawson Tait and Joseph Price are in full harmony with this opinion. T. Gaillard Thomas 2 recommends a Paquelin cautery brought to a red heat, with which he cuts through the sac, removes the fetus, and then fills the sac with antiseptic cotton. W. T. Lusk3 recommends the faradic current, the full force of a one-cell battery, applying one pole to the site of the tumor per vaginam or rectum and the other two or three inches above Ponpart's ligament. The application should last for five or ten minutes and be repeated daily for a week or ten days, or until marked shrinking in the tumor is observed.

The opponents of electricity urge that it may and frequently does cause rupture. To this Brooks H. Wells, in Pozzi's "Gynecology," says "that it is doubtful if the use of electricity without puncture has directly caused the rupture of the fetal sac or the death of the patient"; and Dr. Byford states "that if we have a case of extra-uterine pregnancy in the early months it

^{1 &}quot; Medical and Surgical Gynecology."

^{2 &}quot; Diseases of Women," 5th edition,

[&]quot; "Science and Art of Midwifery."

is safe to destroy the fetus by electricity and keep the patient in bed until absorption has noticeably commenced." T. G. Thomas says of operative procedures that the secondary operation for the removal of the contents of the fetal sac is always safer than the primary operation.

With such eminent authority upon both sides of the question it is a matter of grave importance to decide upon a course of treatment. We must, nevertheless, remember that these cases do not all come under the care of eminent laparatomists, and these patients cannot all be placed in well-ordered hospitals, but frequently must receive treatment at their homes, where the physician cannot make the conditions and environments as he would, but must accept them as he finds them; and if in electricity we have an agent with which we can safely destroy the life of the fetus, and the secondary operation for the removal of the contents of the fetal sac is safer than the primary operation, we may conclude that the conservative treatment of these cases is to use the electricity and operate when the condition demands it. The following cases are illustrative, and I therefore report them.

Case I.—Mrs. W.; age 30; one child 8 years old. The history was one of pelvic inflammation of several years' standing. Dr. Fabrique saw her first on November 5th, 1888. At that time and for several days preceding she had suffered severe pain over region of gall bladder, and he suspected hepatic colic; the menses had been regular. On the second day following she was suffering severely again, and he made a vaginal examination and suspected a tubal pregnancy. A consultation was held with one of our prominent physicians, who thought the first opinion was correct-viz., hepatic colic. On this date Dr. Fabrique left the city for several days, and the patient was under the care of the consultant physician. Dr. Fabrique returned on the 16th, and on the 17th he was again called to see her, when he found her in a violent paroxysm of pain followed by collapse. Within an hour I saw her with him. The collapse was profound, and on vaginal examination we found a large, doughy mass to the left of and behind the uterus. The patient never rallied, and died about six hours after the tube ruptured. On post-mortem examination the tube was found ruptured very close to the uterus, and the embryo and membranes were found in the abdominal cavity.

Case II.—Mrs. J., age 30 years, mother of four children, has had two miscarriages. Saw her in consultation with Dr. Fabrique April 1st, 1889. The patient had the ordinary symptoms of early pregnancy, together with sharp, lancinating pains in the lower abdominal and pelvic region. Upon vaginal examination there was exquisite tenderness throughout the pelvis, and on the right side of and posterior to the uterus was a small tumor which was very tender to touch. The uterus was displaced to the left side and forward, and immovable. We diagnosed the case as one of tubal pregnancy, and at once began the use of faradic electricity, using the full strength of a one-cell battery for ten minutes each day for ten days; there was no shrinkage in the tumor and no abatement of the pain and tendernessin fact, both conditions were more intense. A laparatomy was consented to, and on April 12th we operated. Unfortunately the tube ruptured during the time the patient was being anesthetized. We opened the abdomen and found the rupture into the peritoneal eavity, which was filled with blood. We did not find the fetus; the specimen, however, was examined microscopieally by Dr. J. S. Foote and our diagnosis confirmed. The patient never fully rallied after the operation, and died on the third day with not well-marked symptoms of peritonitis. No post-mortem.

There has always been an uncertainty in our opinion relative to the cause of death. Every aseptic precaution was taken, but we flushed the abdominal cavity with water at 110° F. Whether the water was too hot or too freely used, thereby disturbing the endothelium of the peritoneum, or whether the shock incident to the rupture was the governing factor, are questions upon which we have never been satisfied.

Case III.—Mrs. L., age 30 years, mother of two children, had a miscarriage two years ago, followed by septic trouble. I saw her with Dr. Fabrique on February 1st, 1892. She had the ordinary symptoms of early pregnancy: menses absent, neuroses about as usual, but there was severe abdominal and pelvic pain. Vaginal examination revealed great tenderness throughout the pelvis, enlarged uterus with a small tumor to the left of it. Diagnosis, tubal pregnancy. Dr. Fabrique began the use of galvanic electricity, using from seventy-five to one hundred and twenty-five milampères for ten minutes each day for about ten days, when the pain and tenderness were relieved and the

tumor very much diminished in size. From this time forward she had very little pain and her health was unimpaired. During the following year she became pregnant, and for the first five months she suffered torturing pains from the traction upon the adhesions. She passed safely through her pregnancy, however, and was delivered on August 29th, 1893, nothing unusual following the labor. I have seen and examined her since the birth of her last child, and the small nodule or tumor is still present, but giving her no trouble.

Case IV .- On July 1st, 1892, I was called to see Mrs. M.; age 25; married four years; no children and no miscarriages. Three years prior to my visit she had missed two menstrual periods, and during that time suffered severe pain and tenderness in lower abdominal and pelvic regions. She was at that time examined by a physician, who said she had "inflammation," and, after the menses were re-established, told her she was all right. From that time to the date of my visit she had frequently had painful attacks, but no serious trouble. When I first saw her she had a temperature of 103°, with rapid pulse, and complained of intense pain in the right ovarian region. Vaginal examination revealed a fixed and displaced uterus, and a tumor as large as a hen's egg in the region of right tube. On the 4th there was a chill, followed by high fever, which after four or five days subsided and there was marked improvement. My diagnosis was pyosalpinx which was leaking into the peritoneal cavity and lighting up a localized peritonitis. I advised a laparatomy, but this at the time was not agreed to. The patient improved until the 23d, when she had another chill, which was followed by high fever and prostration as before. At this time Dr. Fabrique was ealled in consultation, and he concurred in the opinion given and urged a laparatomy as soon as we thought the patient could bear it. The inflammatory condition gradually subsided and there was a general improvement in her physical condition. On August 18th we operated, removing both tubes and ovaries. The mass of exudate around the uterus and in the folds of the broad ligament completely obliterated all anatomical landmarks, and we had to break through this to find the fundus of the uterus, from which we worked our way outward along the line of the broad ligament. The adhesions were very dense and strong, requiring extreme care to divide them. You may imagine our surprise when,

upon opening the tube, instead of finding it filled with pus we turned out an old encystal pregnancy, doubtless dating back to the time of the "missed menstrual periods" three years before. This case had been pus in its history throughout, and she was in a septic condition at the time of the operation. Her recovery was very tedious; she, however, completely recovered.

Case V.—December 5th, 1892, about 2 o'clock A.M., I was called to see Mrs. H.; married six years; one child four years old, and one miscarriage three years ago, since which time she has had repeated attacks of pelvic inflammation. She stated to me at the time of my visit that two days previous her menses had come on, and that, going down town, she had gotten her feet wet and this stopped her menses. She was suffering excruciating pain on the left side; and knowing her previous history, and having treated her through an attack of pelvic peritonitis some months previous, I accepted her explanation and without examination gave her one-third grain of morphia hypodermically, which not relieving her I repeated in twenty minutes. This quieted the pain and I left, promising to call during the morning. At 10 o'clock A.M. I found her resting quietly, and, believing the trouble over, left instructions to call me if she needed me. Between 3 and 4 o'clock P.M. I was hastily called to see her, the messenger stating that she was dying. When I reached her I found the surface cold, the face pinched, the pulse weak and thready, her mind clear. She stated to me that she had, when she sent for me, a terrible pain, but was then better. I made a hurried vaginal examination and felt a large, fluctuating mass at the left of and posterior to the uterus. I gave one-fortieth grain of strychnia with whiskey hypodermically, and applied heat to the surface. Dr. Fabrique was called in consultation, and we gave as our opinion that the case was one of ruptured tubal pregnancy. The collapsed condition lasted about six hours before there was any reaction, during which time we repeated the strychnia injection three times and gave whiskey hypodermically and also by the mouth freely. Reaction came on slowly, with no indication of recurring hemorrhage. The rupture, we thought, had broken into the folds of the broad ligament. The patient was kept at as near absolute rest as could be secured for the following week, during which time and until the 23d nothing was done except to support the vital forces. The tumor had now very appreciably increased in size and the uterus was being more and more displaced to the right. We felt sure of the correctness of our diagnosis, and on this date began the use of galvanism, giving the patient one hundred and twenty-five to one hundred and fifty milampères from a twenty Law-cell galvanic battery for ten minutes each day for ten days. There was a decided shrinkage in the tumor, and the pelvic tenderness and pain were very much relieved. At this time a profuse bloody flow from the uterus came on and continued for five or six days. After the cessation of this the tumor had decreased in size until it was little larger than a walnut. No further treatment. Since that time the patient has enjoyed good general health; the uterus is still firmly fixed by adhesions, and the small nodule or tumor is still to be felt.

Case VI.-Mrs. O., of Andale, Kansas; age 25 years; no children; one miscarriage. Dr. Fabrique was called to see her at her home about April 15th, 1893. She was confined to her bed and was suffering severe pain over the lower abdomen. The history was that four months preceding she had a violent, painful attack followed by collapse, and since that date she had suffered at intervals and had been the greater part of the time confined to her bed. For the past five months there had been an irregular menstrual flow. At the time of his first visit a well-defined tumor could be felt in the pelvis, extending above the pubes. His diagnosis was ectopic pregnancy which had ruptured into the fold of the broad ligament four months previously, when she suffered the violent pain which was followed by collapse. He advised that the patient be removed to the city for treatment, which advice was complied with, and on the 20th I saw and examined her with him. On this date he began the use of galvanism. The patient did not bear this well, tolerating only from fifty to sixty milampères. The treatment was continued daily until May 3d or 4th, at which time the tumor was unchanged except a slight increase in size, and the pain and tenderness were not relieved. The electricity was discontinued, and on the 8th he did a laparatomy, removing only the affected tube and ovary, with the fetus, placenta, and membranes. The patient made a good recovery.

These cases illustrate several important features. The first one, the cataclysmic variety of Barnes, was so rapid in its course that a positive diagnosis could not be made prior to the time of rupture, and that occurring into the peritoneal cavity the hemorrhage was fatal. In the second case faradic electricity failed to destroy the vitality of the fetus, and we think that the trial was a most thorough one. In the third case galvanism used as stated did unquestionably destroy the vitality of the fetus, and this fully demonstrates the fact that these patients may conceive and bear children after the occurrence of the ectopic gestation. The fourth case illustrates and bears out the statement of Pozzi that "internal suppuration may occur in the sac long after the contents have become encysted and rendered apparently an inert mass." The fifth case again demonstrates the efficiency of galvanism. In the sixth case galvanism was not effective, but whether on account of the intolerance of the patient to bear a current of sufficient strength, or whether from the advanced stage of the pregnancy, I am unable to say; I am inclined, however, to the former opinion.

Our manner of using galvanism was with a large clay electrode applied to the abdomen, and an ordinary vaginal electrode, wrapped with absorbent cotton, introduced into the vagina well under the tumor. The abdominal electrode was connected with the positive, and the vaginal electrode with the negative, side of the battery.

I desire to express my thanks to Dr. A. H. Fabrique for his courtesy in giving me the histories of the cases which I saw with him, and to acknowledge my appreciation of his and Dr. E. B. Allen's able assistance in my own cases.

THE MINUTE ANATOMY OF THE FALLOPIAN TUBES.

MARY A. DIXON JONES, M.D., New York.

(With ten illustrations.)

The Fallopian tubes are usually described as cylindrical, hollow organs, eight and a half to nine and a half centimetres in length, and opening into the superior angle of the uterus. The calibre is narrowest at the os internum, continues small for the

inner half, and then gradually widens till it opens into the ostium abdominale, where are spread out the leaf-like folds of the ampulla. The layers constituting the wall of the tube are given as follows: first the peritoneal covering, next the longitudinal and circular layers of muscles, and, within, the mucosa, making numerous folds, the shortest of which are at the uterine opening, the longest and most convoluted at the infundibulum.

I have long been convinced that the study of the minute anatomy of the tubes would reveal a far more complicated structure. Since 1885 I have been studying microscopically the normal and pathological anatomy of the tubes and ovaries. These researches have been conducted in Dr. C. Heitzmann's laboratory and with his assistance. The last few months I have devoted especially to studying normal tubes, and the results of these investigations I now lay before the profession.

It is generally recognized that the tubes are direct prolongations of the uterus; it is reasonable to assume that all the muscle layers present in the walls of the uterus would be found, though on a smaller scale, in the walls of the tube. This I have invariably found to be the case. The muscles of the uterine wall are, first, a longitudinal layer close beneath the mucosa, and which sends delicate prolongations to the tubular glands of the latter (Hennig and Boldt); second, a broad layer, composed of interlacing longitudinal and transverse muscle fibres, intermixed with oblique layers; third, a vascular layer, consisting mostly of venous blood vessels; fourth, two layers of muscles, each running in an oblique direction. These last-mentioned layers are subperitoneal. In the tubes we find layers exactly corresponding to these. The innermost layer of muscles is that of the mucosa proper, mainly composed of circular fibres intermixed with longitudinal bundles, both of which send prolongations into the folds of the mucosa throughout its extent, from the uterine ostium to the fimbriated extremity. Thus the mucosa has a muscle apparatus of its own, consisting of circular and longitudinal bundles. This is a most interesting and important fact, yet I find only three authors who refer to any muscular fibres in the mucosa. Stricker says: "The muscular layer of the mucous coat consists of longitudinal muscles." C. Heitzmann: "The portion nearest to the epithelium is, in young persons, myx-

^{1 &}quot; Manual of Histology," 1872, p. 621.

² "Microscopical Morphology," 1883, p. 829.

omatous, in older persons loose fibrous connective tissue, having longitudinal bundles of smooth muscles, more fully developed toward the fimbriated extremity of the tubes." Pozzi¹ remarks, in a description of a plate (but no reference is made to it in the text): "The muscular coat is principally made up of circular fibres; above and within it is reinforced by longitudinal fibres, some of which spread into the muscular layers."

The body of the wall, as is generally acknowledged, has two layers of smooth muscles, a broad circular and a narrow longitudinal layer, which are interlacing. These two layers are the only ones usually described. Authors generally seem to have overlooked a double set of muscle bundles directly under the peritoneum and corresponding to the outermost layers of the uterus. These two layers of muscles are, in both the uterus and the tubes, arranged in an oblique direction, crossing one another at acute angles. In all sections of normal tubes I have invariably met with these six layers of muscles: first, circular and longitudinal in the wall proper; second, two distinct layers of the mucosa, circular and longitudinal; third, two oblique layers of muscles, the fifth and sixth, close beneath the peritoneum.

This abundant supply of muscles necessarily gives to the Fallopian tubes great power and an infinite variety of motion. We know that each tube is repeatedly fixing itself upon the corresponding ovary, and may stretch to the one of the opposite side, this probably constituting what Schröder chose to term the external migration of the egg. We know that an immense number of ova are continually being perfected; in one microscopical section of an ovary I counted one hundred and ninety-four ova. Nature is always abundant in her supplies, and there is provision for this almost infinite number of ova to be taken by the Fallopian tubes, whether these ova come to perfection or not. During life the tube wall is at no moment at perfect rest; as stated above, there must be continual peristaltic movement of the tubes during ovulation. In consequence the folds of the mucosa must continually change in length and in configuration. This can be accomplished only by a large and complicated muscle apparatus.

The two sets of muscle fibres of the mucosa are antagonistic in their action, and the dendritic ramifications of the folds become intelligible only by the alternate contractions of the

¹ Vol. ii., p. 2.

circular and longitudinal bundles. It is also highly probable that the muscles of the walls of the tube are again antagonistic in their action to those of the mucosa. Hence a contraction of the circular muscle of the tube wall will cause the greatest bulging of the folds. There is a similar antagonistic action of the layers of smooth muscle fibres in the small intestines: a contraction of the muscles of the wall invariably results in an extension of the muscles of the mucosa, whereby the villi are considerably elongated and rendered almost filiform, much diminishing the calibre of the intestines. Contraction of the muscles of the intestinal mucosa, on the contrary, causes a considerable shortening and broadening of the villi, with a simultaneous extension or relaxation of the muscles of the intestines proper. These alternate contractions and extensions of the muscle layers produce what is known as the peristaltic motions of the intestines.

In the tube we find similar relations between the muscle bundles, and it is reasonable to conclude that the result of the contractions and extensions of the muscle layers will be similar to that observed in the small intestines. In the latter organ the villi do not ramify; but the mucosa of the Fallopian tubes is much more complicated; we find secondary, and even tertiary, ramifications are very common. These are due to the presence of abundant circular and longitudinal muscle fibres belonging exclusively to the mucosa.

With these introductory remarks I will enter upon the description of the anatomical features of the tubes, beginning at the uterine ostium and proceeding toward the fimbriated extremity, both in transverse and longitudinal sections.

Transverse Section through the Tube near the Uterus.—As all my specimens were obtained from opphorectomies, I am unable to make statements about the gradual changes of the mucosa of the uterus into that of the tube. In the section before me we are at a small distance from the uterus, as is proved by the short though fully developed folds of the mucosa. A striking feature in this specimen is the presence of two calibres of the tubes separated from one another by a broad layer of muscles (see Fig. 1).

In my collection I have a tube showing with the naked eye a double calibre, or rather the tube is bifurcated within an inch of its origin from the uterus. I have found two other instances of double calibres. Thus in my collection I have three cases of this interesting anomaly.

In the first-mentioned specimen the tube wall is broadest at the upper periphery and narrowest at the lower periphery, corresponding to the two calibres. The mucosa shows folds with primary and secondary ramifications, between which exist short and non-branching folds throughout the inner periphery of the mucosa. Around the calibre of the tubes we notice a well-pronounced layer of smooth muscle fibres, forming the ring muscle of the mucosa. Its bundles are interlaced by scanty groups of muscle fibres, cut transversely, which correspond to

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Co.

Fig. 1.—Tube near uterus; transverse section. \times 25. C^1 and C^2 , two distinct calibres lined by mucosa; F, F, folds of mucosa covered with columnar, ciliated epithelia; M, M, muscle of mucosa; BT, muscles of wall in transverse section; BL, muscles of wall in longitudinal section; A, artery; V, vein; L, lymph vessel.

longitudinal bundles. The ring muscle sends broad prolongations into the ramified, and narrow bundles into the non-branching and shallow, folds. The offshoots of the ring muscle penetrate the folds mostly in two bundles, being broad at the base of the folds, and gradually becoming more delicate upon approaching the summits of the folds, both primary and secondary. The two bundles are subjacent to the epithelia and hold between them a

delicate fibrons or myxo-fibrous connective tissue abundantly supplied with blood vessels. At the summits of the primary folds we frequently notice the two delicate muscle bundles producing a loop. Not infrequently the delicate muscle bundles, consisting of only two or three spindle-shaped muscle fibres, seem to ramify in the myxomatous or myxo-fibrous connective tissue. This holds also transverse sections of smooth muscle fibres, nowhere abundant, and difficult of definition on account of the similarity of transverse sections of smooth muscle fibres to the lymph corpuscles embedded in the meshes of the myxomatous or myxo-fibrous reticulum.

The epithelium covering the mucous folds is everywhere of the columnar variety, somewhat varying in height. A basement membrane between the epithelium and connective tissue is nowhere present; but, as stated, the muscle bundles are often found subjacent to the epithelia, which seem to rest directly upon the bundles composed of delicate nucleated spindles. The middle portion of the tube wall shows longitudinal, transverse, and oblique bundles of smooth muscle fibres, held together by a delicate fibrous connective tissue. The upper portion of this tube wall is rich in transverse sections of muscles, being the longitudinal bundles passing from the uterus into the tube wall. At the lower periphery of the tube the wall is made up of circular muscle bundles corresponding to the longitudinal section of the ring muscles, largely in excess of the transverse sections, which, in this situation, correspond to the longitudinal muscles. These two layers are by no means separated, but fully interlacing throughout the extent of the tube wall.

Outside of the broad muscle layers of the tube wall we meet with numerous blood vessels, nerves, and lymphatics, corresponding to the layers seen in the walls of the uterus. In our specimen both the arteries and the veins are filled with blood, evidently caused by the ligation of the tube wall before its removal. Outside of the vascular layer is a layer of fibrous connective tissue made up of comparatively coarse bundles. This layer is intermixed with small bundles of smooth muscle fibres, which, crossing one another at obtuse angles, must be defined as oblique muscles. These are the two outermost muscle bundles, which seem to have entirely escaped the attention of previous observers. I propose to term them the subperitoneal muscle layers of the tube wall. The outermost layer of the tube

is made up of coarse bundles of fibrous connective tissue of the peritoneum.

All sections made transversely through the tube will in this situation show, in company with the blood vessels, a number of nerves. The blood vessels are larger and the nerves most numerous at the lower periphery of the tube wall, where all these formations bend over from both sides of the uterus to the lower periphery of the tube. A most striking image was obtained in

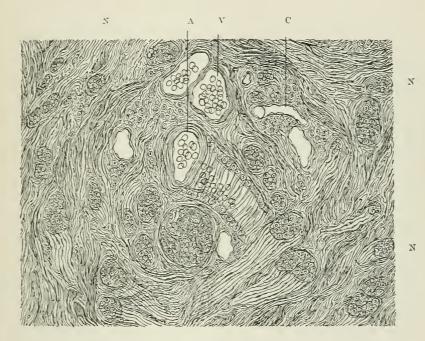


Fig. 2.—Bundles of medullated and non-medullated nerves in the tube wall near the uterus. \times 150. A, artery; V, vein; C, capillary; N, N, N, nerves.

one of the transverse sections, illustrative of the nature and the number of nerve fibres (see Fig. 2).

Even with low powers of the microscope we see that the bundles of nerve fibres as well as simple nerve fibres are very abundant. The accompanying nerves are either in the shape of sharply circumscribed nerve bundles bordered by a distinct perimesium, or they are embedded, in the shape of single nerve fibres, in large numbers in the loose connective tissue surrounding the larger blood vessels, both arteries and veins. The nature

of the nerve fibres can be established only by higher powers of the microscope (see Fig. 3).

It is evident that two kinds of nerve fibres course in the tube wall—viz., medullated and non-medullated nerve fibres. The medullated nerve fibres show a distinct layer, or myaline, the outer sheath of which—so-called Schwan's sheath—holds large nuclei. Between the myaline and the central axis cylinders there is invariably met with an axis-cylinder sheath, likewise supplied

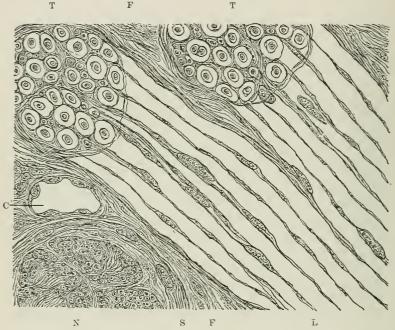


Fig. 3.—Bundles of nerves at the origin of the tube from the uterus. \times 500. N, bundle of non-medullated nerves in transverse and oblique sections; S, connective-tissue sheath of bundle, with large oblong nuclei; T, T, medullated and non-medullated nerves in transverse section; L, medullated and non-medullated nerves in longitudinal section; F, F, fibrous connective tissue.

with delicate nuclei. In the perineurium internum, between the medullated nerve fibres, we frequently see non-medullated nerve fibres, consisting of one or two axis cylinders embedded in an axis-cylinder sheath. Similar features are known to exist in the white substance of the spinal cord, as well as in the bundles of medullated nerve fibres supplying different organs. Aside from bundles of medullated nerve fibres, we see bundles of non-medullated or sympathetic fibres, distinguished by the small size of their axis cylinders and the lack of myaline investment (see Fig. 3, N).

Thus two sets of nerves enter the tube wall, and again two sets of non-medullated nerve fibres, one mixed with the medullated ones, and the other, sympathetic, running in separate bundles. This fact would indicate that the innervation of the tube wall is a double one, probably separate for the transverse and longitudinal muscles, corresponding to the antagonism that

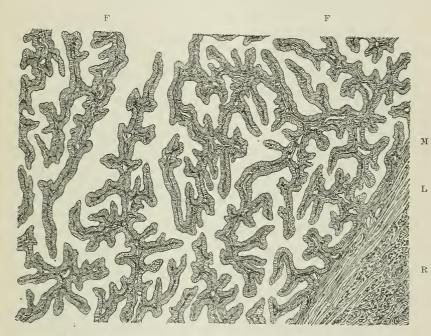


Fig. 4.—Mucosa of tube in longitudinal section near uterus. \times 25. F, F, folds of mucosa, with manifold branches; M, longitudinal muscle of mucosa; L. longitudinal muscle of tube wall; R, ring muscle of tube wall, in transverse section.

exists between the transverse and longitudinal tracts, and similar to the double innervation of the walls of the intestines.

Longitudinal Section of the Tube near the Uterus (see Fig. 4).—In the longitudinal sections the folds of the mucosa, that appeared comparatively simple in the transverse sections, exhibit a large number of graceful ramifications, not only of a primary and secondary, but also of a tertiary and quaternary order. The muscle of the mucosa shows longitudinal bundles freely interlaced by the transverse sections of the ring muscle. There is no

doubt about the two muscle layers being present in the mucosa of the tube wall—viz., a ring and a longitudinal muscle, both of which extend not only throughout the surface of the mucosa, but throughout even the finest ramifications of the folds. I interested myself in tracing the muscle fibres through the various folds to the tiniest branches.

In the longitudinal sections it is the longitudinal muscle which sends double offshoots into every fold of the mucosa, traceable even into its ultimate and most delicate branches. We see that every fold and every branch of the fold contains a double set of muscles-viz., the longitudinal and the transverse. This fact is the only explanation for so complicated a figure of ramified folds as we observe in the tubal mucosa. The folds in the longitudinal section are grouped in such a manner that three-fourths of the calibre of the tube is filled with numerous and branching folds, whereas the last fourth is taken up by short and shallow ramifications. Thus the calibre of the tube must be looked at as an eccentric formation. Nor is it probable that the graceful and richly branched folds are confined during life to one periphery of the calibre. Very probably the folds come and go, and change in shape, corresponding to the peristaltic movements of the tubes, depending upon the larger muscle layers of the tube wall proper.

Transverse Section through the Tube in its Middle Portion.—The mucosa shows a pronounced ring muscle, narrower than those seen in the transverse sections near the uterus. This muscle is freely interlacing with transverse sections of longitudinal bundles likewise belonging to the mucosa. The ring muscle sends prolongations into the folds of the mucosa, the same as was described in transverse sections from the neighborhood of the uterus. The folds themselves are much larger and much more ramified in the middle portion than near the uterus, some, corresponding to the upper and lower periphery, very long, freely ramifying; others, corresponding to the anterior and posterior aspect, short and non-ramifying (see Fig. 5).

The cut represents the freely branching folds of the mucosa. This feature I consider explicable only by a state of contraction of the muscle bundles entering the folds. If the longitudinal muscle of the mucosa is extended, the transverse muscle, on the contrary, is contracted. This will explain the peculiar secondary and tertiary branches of the folds. This condition must necessarily depend upon a contraction of the

ring muscle of the tube wall proper, this being antagonistic to the muscle of the mucosa. The expanded folds will show a very narrow layer of central connective tissue and thin layers of smooth muscles, whereas the blood vessels are conspicuous and wide, admitting of a free circulation of the blood.

Quite different is the aspect of the mucosa where the folds are broad and short (see Fig. 6).

Here the ring muscle of the mucosa is contracted; the ring muscle of the tube wall, on the contrary, is relaxed. The

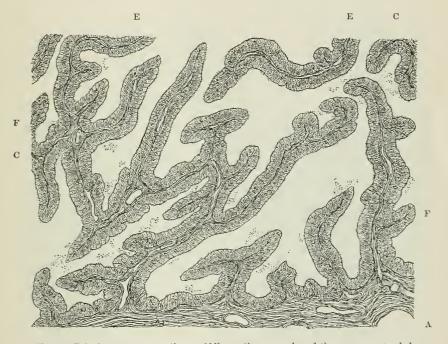


Fig. 5.—Tube in transverse section; middle portion; muscles of the mucosa extended; muscles of the tube wall contracted. \times 100. F, F. folds of the mucosa, much elongated and ramifying; C, C, connective tissue of folds, carrying blood vessels and smooth muscles; E, E, columnar, ciliated epithelia of the folds; M, ring muscle of the tube wall, cut longitudinally; A, artery in transverse section.

central connective tissue of the folds appears broad, the two muscle bundles very conspicuous, and the loops at the summit of the folds very pronounced. The blood vessels of the mucosa seem to be narrowed, as if compressed; the surface of the mucosa, in such a condition, looking probably pale and anemic.

This figure also illustrates the relation of the six muscle layers. The broadest layer is unquestionably the ring muscle

of the tube wall. Next in breadth is the longitudinal muscle of the tube wall, here shown in bundles cut transversely. Outward of this layer we notice a large number of blood vessels, mainly arteries and veins, surrounded by and embedded in loose fibrous connective tissue. Outward of the vascular layer we find the inner and outer oblique muscles, or the subperitoneal layer. Both of these layers of muscles are rather narrow, as if their function was to regulate the afflux of blood into the tube

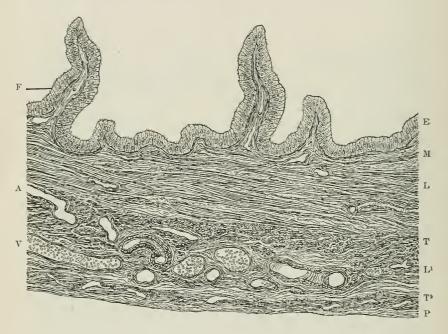


Fig. 6.—Tube in transverse section; middle portion; muscles of the mucosa contracted muscles of the tube wall extended. \times 100. F, fold of mucosa: E, covering columnar, ciliated epithelium; M, muscle of mucosa; L. ring muscle of tube wall, cut longitudinally; T, longitudinal muscle of tube wall, cut transversely; L¹, inner oblique muscle; T¹, outer oblique muscle; A, arteriole; V, vein; P, peritoneum.

walls, both diminishing the quantity by their contraction or admitting an increased afflux by their extension.

The peritoneum forming the outermost layer of the tube wall is invariably composed of coarse bundles of fibrous connective tissue, being supplied with blood vessels of its own. The capillary blood vessels of the peritoneum are doubtless most numerous in its outward portion, subjacent to the endothelial cover. The same relation of the blood vessels of the perito-

neum I have found to exist in the peritoneal folds forming the broad ligaments, and have described them in my article, "Microscopical Studies in Pelvic Peritonitis." The relation of the blood vessels in the peritoneum enveloping the tubes is identical with that forming the broad ligament.

Longitudinal Section of the Middle Portion of the Tubes.— Sections from this portion of the tube show the folds longer, with more numerous ramifications, than those in the vicinity of the uterus. The larger vessels, both arteries and veins, are seen

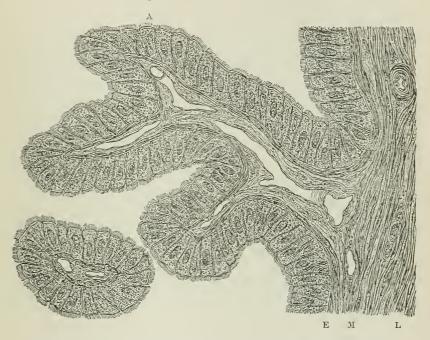


Fig. 7.—Folds of the mucosa of the tube. \times 500. A, longitudinal section of a fold; T, transverse section of a fold; E, columnar, ciliated epithelium; M, muscle of mucosa; L, ring muscle, cut longitudinally.

at the lower periphery of the tube. Outside of these vessels we again meet the two oblique layers just beneath the peritoneum.

Transverse Section of the Tubes near the Fimbriated Extremity.
—Specimens obtained from the neighborhood of the fimbriated extremity exhibit, as elsewhere, two sets of folds, one being shallow and but little ramifying, the other with manifold branches. The calibre between the folds is extremely narrow

¹ Medical Record, May 28th, 1892.

and of an angular shape. This calibre, being bordered partly by large and branching, partly by short folds, is always eccentric. In the specimens, obtained from a tube with a double calibre, the septum between the two mucous surfaces is still broad and made up of oblique and circular bundles. The mucous folds in the smaller calibres are likewise small. In some of the specimens a striking feature is the large number of capillary blood vessels, all engorged with blood from the ligation before removal.

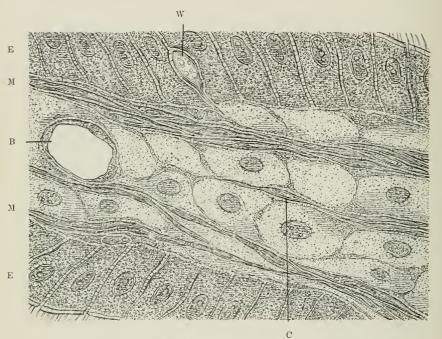


Fig. 8.—Fold of mucosa in transverse section; ramifications of smooth muscle fibres, \times 1,200. M, M, lateral muscle bundles; C, central muscle bundle, ramifying in trabeculæ of the myxomatous tissue; B, capillary blood vessel in transverse section; E, E, columnar, ciliated epithelia; W, wedge of living matter between two epithelia.

Some authors claim that the number of capillaries of the tube wall increases toward the fimbriated extremity.

For illustration I have selected from this section one of the shallow non- or very little branching folds (see Fig. 7).

Close to the branching folds there appears a transverse section of a fold of a slightly oblong shape, and others of a perfectly circular contour. The folds, upon contraction, may produce conical or filiform offshoots, known already to previous writers;

oblong or circular transverse sections must correspond to such conical offshoots.

In the illustration we recognize the two bundles of the ring muscle of the mucosa, running into the fold close beneath the epithelial layer, and producing loops at the summits of the ramifications. The muscles occasionally send spindle-shaped offshoots into the myxomatous or myxo-fibrous tissue, producing the core. Although the continuity of such branches can be traced to the main lateral bundles, yet we are not certain that trabecular myxomatous tissue may be composed of muscle fibres, although no logical objection can be raised against it. Between the two

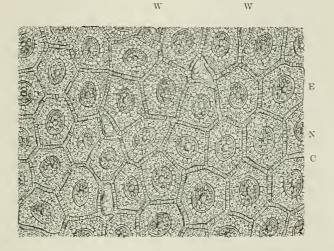


Fig. 9.—Columnar epithelium of a fold of the mucosa of the tube, in top view. \times 1,300. E. polyhedral epithelium; N. nucleus in centre of epithelium; C, cement substance traversed by thorns; W. W, wedges between the epithelia.

main subepithelial muscle bundles we find embedded in a myxomatous or myxo-fibrous connective tissue a varying number of capillary blood vessels. These must be under the control of the muscle fibres which regulate the afflux of blood to the mucosa, according to the state of contraction or extension.

Longitudinal sections near the fimbriated extremity are more delicate and more fully branching.

The epithelial layer of the mucosa is composed of columnar, ciliated epithelia. The epithelium, in sections of the tube either transverse or longitudinal, not infrequently appears in top view, especially when the razor has caught the periphery of the

fold. In this instance we notice graceful fields, composed of hexagonal formations, separated from one another by a delicate light ledge of cement substance separating one field from all its neighbors. Upon closely watching this cement substance with the highest powers of the microscope, we are able to ascertain the presence of delicate conical spokes traversing the light ledge of cement substance (see Fig. 9).

Each polyhedral field exhibits a central nucleus, but no trace of cilia can be seen. This aspect of columnar epithelia has been described by some authors as tessellated or pavement epithelium, which would seem to be incorrect, as the image illustrated in

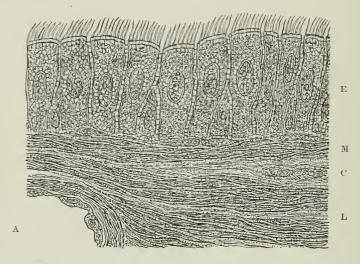


Fig. 10.—Mucosa of the tube, in side view. \times 1,200. E, row of columnar, ciliated epithelia; M, muscle of mucosa; C, delicate fibrous connective tissue; L, ring muscle, cut longitudinally; A, artery.

Fig. 9 can easily be explained by a bird's-eye or top view of columnar epithelium. The illustration plainly demonstrates the flattening of the protoplasmic bodies by the intervening cement substance. The image is very similar to that seen on the surface of the peritoneum.' The difference is that in the latter instance we have polyhedral flat endothelia before us, each holding a central nucleus, whereas in the mucosa of the tube we have the top view of columnar epithelia, each of which likewise contains a central nucleus.

Far more commonly the lateral aspect or side view of the 1" Microscopical Studies in Pelvic Peritonitis," Medical Record, May 28th, 1892.

columnar epithelia is met with (see Fig. 10). The protoplasmic bodies termed epithelia are of an irregular columnar shape, either tapering toward their base or toward their feet, by means of which they are attached to the connective tissue. Occasionally we meet with globular, oblong, or circular protoplasmic bodies between the fully developed epithelia, appearing as wedges, possibly being stored-up material for a new formation of epithelia. Such wedges are sometimes nucleated, at other times almost homogeneous, without a conspicuous reticulated structure in their interior. Each epithelium is separated from its neighbors and from the wedges by a delicate layer of cement substance, which is invariably traversed by a rectangular conical thread or thorn, serving for the intercommunication of the reticulum of living matter within the epithelia. With good immersion lenses we see each hair or cilium traversing the basal ledge of cement substance and appearing in direct cennection with the reticulum of living matter in the protoplasm of the epithelia. The outer or free portion of the cilia is probably cornified; the inner portion, on the contrary, traversing the cement substance and the protoplasm, is very probably still living matter. The fact that the cilia penetrate to a short distance into the interior of the epithelia was first described thirty years ago by Max Schultze in Bonn, Germany. The inosculation of the cilia with the reticulum of protoplasm was first announced by C. Heitzmann twelve years ago. This fact renders explicable the wonderful phenomenon of the cilium movement of the epithelia. The ledge of cement substance serves as a comparatively solid fulerum for the fixation of a two-armed lever. If the short arm of the lever is pulled in consequence of the contraction of the reticulum of living matter, this gentle movement will suffice to cause a wide excursion of the long arm of the lever. The feet of the epithelia are invariably connected, by means of delicate thorns, with the subjacent formations of connective tissue or, eventually, of smooth muscle fibres.

The epithelia seem, throughout the whole tube, to serve for the covering of the surface of the mucosa and all its folds and ramifications.

Bland Sutton has stated that "the familiar rugæ of the mucous membrane of the Fallopian tubes are in essence glands."

I can find nothing on the mucous membrane of the Fallopian tubes of the human female, even by high powers of the micro-

¹ Transactions of the Obstetrical Society of London, 1891, vol. xxxii., p. 189.

scope, that would justify the definition of glands. Stricker says: "We have only to make a thin longitudinal section of the tube, either in man or mammals, to be immediately convinced that no glands at all exist in the ovidnet."

The results of my researches I can sum up in the following paragraphs:

- 1. In the tube wall are six layers of smooth muscles. The two main layers are the circular and the longitudinal. These interlace; the circular has the broader area and is nearer the calibre, the longitudinal is nearer the peritoneum.
- 2. The inner surface of the tube wall is made up of myxomatous or myxo-fibrous connective tissue, which in turn is supplied with two muscle layers, a broader longitudinal and a narrow circular, both interlacing.
- 3. The mucosa has folds with many ramifications, serving for the occlusion of the calibre during life. These folds are the result of alternate contractions and extensions of the two muscle layers of the mucosa, the transverse and longitudinal, which are visible throughout all the folds and all the ramifications, arranged in bundles close beneath the epithelial layer.
- 4. Outside of the longitudinal layer of the tube wall is the layer of blood vessels, mainly arteries and veins, in an arrangement similar to that known to exist in the wall of the uterus,
- 5. Beyond the vascular layers are the two narrow layers of smooth muscle fibres, both being oblique, both traceable from the uterine ostium up to the fimbriated extremity of the tube, and they correspond to the two oblique layers of the wall of the uterus. The two oblique layers are bordered outwardly by the peritoneum, and seem to serve mainly for the regulation of the afflux of blood in the subjacent arteries and veins.
- 6. The circular and longitudinal muscle layers are antagonistic in their action. If one layer is contracted the other is relaxed. Again, the two muscle layers of the tube wall proper are antagonistic in their action to the muscles of the mucosa. The contraction of the muscles of the tube wall is accompanied by a corresponding relaxation of the muscles of the mucosa. Within the folds the primary, secondary, and tertiary ramifications are produced by alternate contractions of smaller portions of the muscle layers of the mucosa.

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^{1 &}quot; Manual of Histology," 1872, p. 621.

PATHOLOGY AND TREATMENT OF PERIUTERINE PELVIC INFLAMMATIONS.¹

BY

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A VERY large proportion of our work as gynecologists is occupied with inflammatory conditions in the pelvis extraneous to the uterus and vagina. The pathology of these conditions presents many difficulties, inasmuch as the more ordinary forms of pelvic inflammations are not often fatal. However, we must have rational views of the pathology in order to direct our treatment aright. Let us briefly consider what is essential to us regarding the peritoneum and connective tissue as they are disposed in the pelvis.

Imagine the pelvic basin to be lined with peritoneum, and the nterus, with its adnexa, to be pushed upward between the rectum and bladder to the level of the plane of the brim. By this process certain folds, designated as ligaments, would be formed by a duplication of the peritoneum—namely, the broad ligaments, an anterior and posterior layer, covering the uterus, tubes, and ovaries, which run out laterally to the pelvic walls; the uterosacral folds, which form the lateral boundaries of Douglas' pouch; and the utero-vesical folds or ligaments.

The peritoneum, being reflected from off the anterior abdominal wall about one inch above the symphysis pubis, covers the bladder until it reaches a point on the uterus corresponding to the internal os, and then passes over the uterus posteriorly, forming the pouch of Douglas, which normally extends for an inch or so along the posterior fornix. Between the sinuous pelvic floor and the upper surfaces of the levatores ani muscles is a space, called the subperitoneal space, which is filled with loose connective tissue, sheet fascia, absorbents, lymph glands, a luxuriant plexus of blood vessels, and numerous unstriped muscular fibres which pass from the outer muscular layers of the uterus, in various directions, to the pelvic walls, the abdominal walls, and

¹ Read before the Washington Obstetrical and Gynecological Society.

into the loose parametrium. The round ligaments are derived from the superficial muscular layer of the uterus, and other unstriped muscular fibres, originating from the same source, radiate into the anterior and posterior layers of the broad ligaments, the vesico-uterine ligaments, the ovarian ligaments, and the vessels, nerves, and loose connective tissue which fill this subperitoneal space. These unstriped muscular fibres which radiate from the uterus in this manner usually participate in inflammatory conditions of the uterus and carry the inflammation to the perimetric tissue. The subperitoneal space contains a great amount of connective tissue, numerous arteries, the luxuriant plexus of veins spoken of so strongly by Emmet, absorbents, and lymphatic glands. These structures, taken together, form a compressible cushion for the pelvic organs, but are very liable to inflammatory attacks if the element of sepsis is introduced. Without sepsis I doubt if there is any true inflammation. Thomas Addis Emmet says: "In no other part of the body have we such a matted condition of vessels in the same space; there is an almost incredible venous capacity, and in consequence of the erectile character of the tissues these vessels become varicose from any continued obstruction to the circulation." He says that thickenings in the broad ligaments are, as a rule, due to distended veins. Leopold, of Leipzig, considers the uterine mucous membrane as essentially a lymphatic structure containing utricular glands and blood vessels; but so extensive is the lymphatic supply that he calls it essentially lymphatic in its nature.

The lymph vessels on the uterine mucosa are continuous with the lymph spaces in the pelvic peritoneum and cellular tissue. These absorbents coalesce to form larger ducts, which expand here and there into ganglia, and are interrupted by numerous glands, the most important of which are situated in the cellular tissue, described by Virchow as the parametric tissue, which surrounds the cervix. In no part of the body are the conditions more favorable for the spread of infective processes from the genital passages to the pelvic peritoneum and connective tissue:

Tubal Inflammations.—Lesions of the oviduets play a most important part in pelvic inflammations. The inflammation may be of the nature of a catarrhal salpingitis, which is almost never a primary affection, but secondary to an endometritis. The condition is usually bilateral, and consequently most unfa-

vorable for the passage of the zoösperm. At first only the mucous layer is involved, cloudy swelling and serous exudation take place, and a local peritonitis is likely to be set up at the ostium abdominale, which occludes that opening. If the inflammatory condition continues the ostium uterinum also becomes occluded by the engorgement of the mucous layer, and the tube becomes distended with a fluid which is either mucus, or blood serum containing cholesterin. Such a condition, termed hydrosalpinx, is characterized by a tortuous, sausage-shaped tube with two or three constrictions. Frankenhäuser says he has frequently expressed the contents of such tubes into the uterus, by this means effecting a cure. In one case I had in dispensary practice I feel confident that I must have ruptured a hydrosalpinx. The case was that of a young unmarried woman with a history of dysmenorrhea originating probably from a catarrhal endometritis. The tube on the left side was about the size of a sausage, sinuous in outline, and fluctuating. Under the gentlest bimanual manipulation it snapped under my finger most noticeably to myself and the patient; she expressed great relief at once, and though I urged her with all my power to take a bed in the hospital, she insisted upon going home. No evil consequences followed, and such is usually the history of hydrosalpinx which has not advanced to a markedly septic nature.

Cases are mentioned where the contents of the tubes periodically discharge into the uterus. These are termed "hydrops

tubæ profluens."

It is interesting to note that hydrosalpinx sometimes simulates extra-uterine pregnancy, the vulva and vagina taking on a dusky hue, the breasts filled with secretion, and menstruation being in abeyance, especially if it is bilateral. If the secretions are retained long, the slightest inflammation from infection, traumatism, or exposure to cold may set up an inflammatory condition of the mucous membrane, which will cause either an extravasation of blood into the tube (hematosalpinx) or result in a retrogressive change and the formation of pus. Bandl says that a large majority of tubal inflammations are of the nature of hydrosalpinx.

Pyosalpinx is most frequently, however, caused by either a septic endometritis or by the specific gonococcus of Neisser. The inflammation causes the fimbriæ to adhere to the folds of

the mucous membrane, with a resulting closure of the ostium abdominale. A perisalpingitis is invariably set up, resulting in peritonitic adhesions and thickenings, which are most marked at the distal end of the tube. It is only of late years that the frequency of this condition has been revealed by numerous operators.

Of late years we have become acquainted with a tubercular salpingitis. Dr. Williams, of Johns Hopkins, has a long article in the *Bulletin* on this condition, upon which he has expended a great amount of work.

These are the chief varieties of salpingitis. In all of them there is sure to be a perisalpingitis, which binds the tube most frequently to the ovary and sometimes to the intestine. The tube, when thickened and distended by any of these fluids, becoming attached to the ovary, usually sinks down with it, posteriorly to the broad ligament, into the pouch of Douglas, where it is felt as a sausage-shaped mass separated by a furrow from the cervix. Hart says: "It is of great interest to note the fact that the majority of inflammatory pelvic affections lie posterior to the broad ligaments, suggesting their etiological relations to Fallopian-tube disease."

The treatment of pyosalpinx is invariably celiotomy. A case of hydrosalpinx might well be observed for a prolonged period, provided you are skilful enough to diagnose it from a pus tube. Lesser grades of tubal inflammation may well be treated by prolonged absolute rest in bed, hot douches, counter-irritants, and attention to the bowels.

Ovaritis and Periovaritis.—Acute ovaritis is a rare condition, and when it exists it is usually due to a gonorrheal vaginitis. There are two varieties of ovaritis, the parenehymatous or follicular and the interstitial. It is usually caused by septic infection spreading from the tubes, which at first sets up a periovaritis. In the interstitial form the ovary may rapidly increase to three or four times its natural size, and break down nto a friable mass in which are foci of pus. In the parenchymatous type the peripheral follicles are chiefly affected. If the process does not end in pus formation there is apt to be a cicatricial contraction, when the inflammation abates, which will cause subsequent dysmenorrhea. Ovarian abscesses usually attain the size of a hen's egg, though sometimes they develop as

large as a fetal head. The treatment is either celiotomy, or palliative means by rest, douches, and blisters.

We now come to the more important part of my paper, tak-

ing up firstly

Inflammations of the Pelvic Peritoneum.—In pelvic peritonitis there may be an inflammation of the peritoneum clothing all the pelvic organs; or it may be localized to that which covers a single organ, in which case the terms periovaritis, perisalpingitis, perimetritis, pericystitis, periproctitis are proper. The inflammation is characterized by an intense eapillary hyperemia, with a sero-fibrinous exudation which eventually coagulates into a membranous layer. The minute vessels become dilated, and stasis of the blood stream occurs, with a thickening and infiltration of the tissue. The exudation which is poured out is particularly rich in fibrinogen, consequently a large part of it is deposited as a false membrane containing entangled corpuscles, while the fluid elements accumulate in the more dependent parts of the pelvis. In chronic cases the effusion of lymph may be very copious, so as to cause a considerable degree of abdominal distention. As the plastic exudation, so rich in fibrinogen, continues to be poured out, the false membrane increases in thickness from a mere lamina up to a quarter or half of an inch or more, while the fluid which subsides into the dependent parts becomes traversed by bands and filaments of organized lymph. These false membranes and filaments become tougher and thicker with age, and undergo a certain amount of contraction and retraction, which causes an eccentric position of whatever organ may be most affected with the inflammatory condition. In cases of puerperal septic peritonitis the effused serum is exceedingly liable to undergo suppurative changes, multiple abscesses forming on the peritoneal surface, and the lymphatics and veins becoming engorged with pus, until eventually the whole system is infected. When peritonitis is set up by the escape of irritating matter from the Fallopian tube, ovary, or abscess, an adhesive inflammation is excited which confines the trouble to a limited area. Circumscribed abscesses are usually formed in this manner by a suppurative degeneration of the effused matter. In this form of adhesive peritonitis the encapsulated exudations may remain for a long time dormant, eventually rupturing into the bladder, uterus, vagina, or peritoneal cavity, or degenerating into an ichorous fluid

devoid of pus elements. The contents may be absorbed or undergo various degenerative changes. Undoubtedly pus has been carried for years without producing marked symptoms, though always being a source of danger. Clinically, an almost constant feature of pelvic peritonitis is salpingitis. By far the larger amount of pelvic peritoneal inflammations originate from this source. The septic salpingitis follows upon a septic endometritis, and septic matter, being discharged through the ostium abdominale, sets up an adhesive peritonitis which speedily encapsulates it. The Fallopian tube will probably distend with pus, and eventually become surrounded by a secondary abscess cavity which forms in the peritonitic exudation. The abscess surrounding the tube may properly be called a pelvic abscess, and you will usually find that in these large pelvic abscesses there is, in the centre of it, a pus tube—a peculiar condition, in which you have an abscess within an abscess.

Pelvic abscesses are usually intraperitoneal. They have no definite shape. Their walls are composed of false membrane which has matted together intestine, ovary, tube, or uterus, and formed a cavity with one or all of these for its limits. A pelvic abscess usually has the tube, ovary, or uterus for its central or starting point, and very often surrounds these organs. It is most frequent on the posterior surface of the broad ligament, having for its walls, in front, the broad ligament and uterus; below, the pouch of Douglas and utero-sacral folds; laterally and posteriorly, the pelvic walls and lower bowel; and superiorly, coils of intestine matted together by exudation. This is its position when it originates from the Fallopian tube, as is almost always the case. Polk, in a series of post-mortems at Bellevue Hospital, says that "nothing is more common than evidences of peritonitis about the ends of the tubes." Bernutz, from another series of post-mortems, has also arrived at the conclusion that pelvic abscesses are almost invariably associated with Fallopiantube disease.

Morbid Anatomy of the Pelvic Connective Tissue.—We now come to a consideration of the pathology of the tissues contained in the subperitoneal space, namely, that portion between the under surface of the peritoneum and the upper surfaces of the levatores ani muscles. In this space we have the sheet fascia and connective tissue which surrounds the cervical por-

tion of the uterus and separates the two layers of the broad ligaments. In addition to this we must bear in mind the rich lymphatic and venous plexuses contained therein. The following description of the lymphatic vessels and glands is based on Hart's teaching:

I. "The lymphatic vessels of the vulva and lower fourth of vagina open into the inguinal glands, which form a chain parallel to and just below Poupart's ligament." "From this arrangement the enlargement of the inguinal glands in syphilis and vulvar cancer is intelligible" (Hart).

II. "The lymphatics of the upper three-fourths of the vagina and of the cervix uteri open into the hypogastric glands which lie subperitoneally in the space between the external and internal iliac vessels."

III. "The lymphatics of the body of the uterus pass through the broad ligaments and, along with those from the ovary and tube, enter the lumbar glands."

We have all seen, many times, induration and enlargement of lymphatic glands and lymphangitis following upon a septic wound in any part of the body. Just as surely will the same result follow infection in the genital organs. In the acute forms of puerperal infection death may occur rapidly from a general intoxication without any local pelvic manifestation; but in lesser grades of infection there is undoubtedly an angeioleucitis and lymphadenitis extending from the seat of infection. Clinical experience teaches us that pelvic cellulitis is almost entirely associated with puerperal inflammations, but it is a very frequent condition when septic troubles follow childbirth. Pelvic cellulitis most commonly follows upon lacerations of the cervix. The lymphangitis spreads to the thick pad of connective tissue between the folds of the broad ligament, and a proliferation of the connective-tissue elements takes place. The condition is recognized as a triangular-shaped, indurated mass pressing the uterus toward the opposite side. Sometimes cellulitic exudates obliterate the anterior and posterior fornices and cause them to bulge downward into the vagina. Occasionally also the masses are felt following the course of the broad ligaments, and quite often that of the utero-sacral folds. This utero-sacral cellulitis is a prolific source of lateral displacements of the uterus. Emmet thinks that when the cellular tissue is deprived of its natural elastic nature the rich plexus of veins, losing their support, become enormously engorged and make up the chief part of the masses which are felt. Cellulitis is always associated with more or less local peritonitis, as we would naturally suppose. After any severe inflammation of cellular tissue there is bound to be suppuration or absorption of it, with an approximation of the Fallopian tube and ovary of the affected side to the vagina. In acute septic cases micrococci follow the course of the lymphatics and produce foci of pus, but as a rule these indurated masses may exist for prolonged periods without undergoing suppuration.

It is pretty generally accepted now that the vast majority of perinterine pelvie inflammations, aside from those following puerperal septicemia, are caused by peritonitis consequent upon tubal disease; but the condition of pelvic cellulitis will still continue to be a recognized pathological factor in cases of infection following upon childbirth, abortion, or the introduction of virulent poisons into wounds of the upper vagina, cervix, or uterus.

Treatment of Periuterine Pelvic Inflammations.—If the condition originates from a septic endometritis, as it so frequently does, the uterus should be curetted, washed out, and a gauze drain introduced up to the fundus.

In the acute or chronic forms, where you do not suspect suppuration to have occurred, the patient should be kept at absolute rest in bed, and have morning and evening hot douches, prolonged for fifteen to twenty minutes. If the bowels are not filled with impacted feces it is advisable to keep the patient well under the influence of opiates to quiet peristaltic action. Painting over a large surface of the lower abdomen with iodine should be tried, and, though I have never seen it done, I should be in favor of applying six or eight leeches to the portio vaginalis. Ice-cold applications are better than hot poultices; the latter, in my estimation, favor the growth of septic organisms and hasten suppuration, which might be averted by cold. If there is a gonorrheal history the utmost trouble should be taken to prevent its ravages by antiseptics applied to the inner surfaces of the uterus even, if it has spread there. Diet and tonics, of course, will be attended to; pain will be met with morphia suppositories and opiates; and the temperature will be kept down by sponging with cold water and alcohol, and giving aconite and antipyretics with judgment. The treatment is practically the same whether the condition is pelvic peritonitis, cellulitis, ovaritis, or salpingitis. Celiotomy will be required if suppuration has occurred, and in cases of tubercular peritonitis the abdomen should be opened and flushed with hot water freely. Rarely is it advisable to remove the products of suppuration or effusion by an incision from the vagina or by tapping.

1311 CONNECTICUT AVE., N. W.

TRANSACTIONS OF THE CHICAGO GYNECOLOGICAL SOCIETY.

Meeting of March 16th, 1894.

The President, Fernand Henrotin, M.D., in the Chair.

REPORT OF DEATH FROM LAPARATOMY ON THE TWENTY-FIFTH DAY, WITH EXHIBITION OF SPECIMEN.

Dr. J. H. Etheridge.—This is a case of death occurring in almost a tragical manner on the twenty-fifth day after laparatomy. The patient had diseased tubes and ovaries which required removal. She went through convalescence without a symptom, and was up and around. She was eating well and had every promise of making entirely satisfactory progress and going home. One morning she was suddenly seized, while asleep, with a very severe pain about the umbilicus, getting the interne up about 5 o'clock, who gave her a hypodermic injection to relieve her. I saw her at 9 o'clock, and she was in a state of apparently approaching collapse. Vaginal examination revealed tenderness to the right of the uterus. Nothing that was done was of any avail. The symptoms intensified during the day and night, and she grew gradually worse, the original symptoms being confined exclusively to the abdomen. Her pulse increased so that it could not be counted. Her temperature went up a little beyond normal, then dropped to subnormal; and as the ratio of the pulse and temperature changed, she grew worse of course, and finally died the next morning. Her death was so mysterious that we held an autopsy. On opening the abdomen there immediately gushed out a large amount of feces in solution, the contents of the intestine. We then commenced a systematic examination of the intestine, and found a rupture of the intestine about four feet from the ileo-cecal valve. The last two feet of the small intestine were contracted, and so small that at one place the intestine was not as large as my little finger. Above the ileo-cecal valve the intestine was of normal size and everything appeared all right, except that the intestinal walls

up to the point of rupture seemed to be very thin. The intestine about a foot and a half below the point of rupture had become attached to the broad ligament. I have brought the uterus and remnant of the broad ligament to exhibit to the Society. The ligature with which the tube and ovary were tied off was not involved in the adhesions and had become encysted. The intestine was firmly adherent to the right broad ligament for about three inches. The strange part about the case is that the intestine was apparently not occluded at the point of adhesion, but there must have been some twist in the intestine that caused complete occlusion, and peristalsis, together with the thin wall, was sufficient to rupture the intestine. The cause of death was acute septic peritonitis.

At the time of operation no adhesions existed; both the anterior and posterior surfaces of the broad ligament were free. These adhesions apparently took place in cold blood upon the

normal surface of the broad ligament.

Dr Franklin H. Martin.—It seems to me that a mistake in this case was that the abdomen was not opened before death. The symptoms given—profound shock, pain, and all the symptoms of a ruptured intestine or an organ discharging infected contents into the peritoneal cavity—would have led many operators to reopen the abdomen. No harm could have arisen from so doing, and if it had been opened early, in a case making such good progress, an operator with the skill of Dr. Etheridge might have separated these adhesions, found the difficulty, and treated it on general surgical principles. I do not agree with Dr. Etheridge's statement that adhesions of the intestines "took place in cold blood." I believe there is always a reason why an adhesion of the intestine occurs after laparatomy. Either there is a large denuded surface left upon which attachment is formed, or if one intestine adheres to another it is because that intestine has been denuded of its peritoneal epithelium. Such adhesions occur in the surgical experience of all operators, and the fact that they occurred in this case should not subject the operator to criticism.

Dr. F. Byron Robinson.—I am much interested in this specimen of adhesion of the gut to the broad ligament; not because of the rarity of the specimen, for I have seen similar adhesions a hundred times in autopsies of human beings and dogs, but on

account of Dr. Etheridge's interpretation of the case.

I do not think a twisting or volvulus of the gut caused the bowel obstruction. It was due to peritonitis, which produced intestinal paralysis, which causes tympanites. The wall of the intestine being paralyzed, the fermenting secretions form gases which dilate it. Meissner's plexus is so disordered by the infection that the secretion is either excessive, deficient, or disproportionate. It is my opinion that the chief pain after laparatomy is due to tympanites; the bowel is distended and forms strong adhesions to distant organs by plastic peritonitis. In-

fected bowels will not act; they remain quiescent; but if they are stimulated by cathartics they contract and expel their contents.

My experience from autopsies is that in the first week of peritonitis absorption is very slow; in the second week it begins to progress rapidly; and in the third week the exudates are chiefly absorbed and form organized bands and adhesions. The specimen exhibited by Dr. Etheridge is in the fourth week and shows a well-organized adhesion, no doubt containing new nerves, blood vessels, lymphatic vessels, and connective tissue. It is likely the distended gut became infected from the cut end of the Fallopian tube.

As a result of extensive studies on the cadaver, I believe the apparent stricture in the specimen exhibited by Dr. Etheridge to be due to post-mortem changes—that is, rigor mortis, whereby the circular muscles of the gut are firmly contracted. We may

find the gut in a spasmodic contraction of anemia.

Dr. Martin and I are of the same opinion and do not hesitate to reopen the abdomen after laparatomy when grave symptoms persist. I have saved life by this procedure. I think, however, that Dr. Martin is more sanguine than I am in regard to recovery after feces have escaped into the general abdominal cavity. It is likely that the adhesion of the gut to the broad ligament, in the specimen which Dr. Etheridge presents, had nothing to do with the patient's death. The patient died from perforation of the bowel, which allowed the escape of feces. The perforation occurred from pathological contitions unconnected with the operation—that is, from mucous ulcer or tubercular or glandular degeneration.

Dr. Martin thinks the adhesion was due to trauma or denuding the gut of its peritoneum; I think it was infection. In many of the dogs in which I had not touched the intestines, on post-mortem, a week after laparatomy, the intestines would be plastered over with adhesions and bound together. I have invariably observed the same condition in autopsies on the human subject. I therefore believe that adhesions of the intestines are chiefly due to infection. I believe an operator can traumatize the gut and do a great deal of manipulation, if the hands are

clean, without causing adhesions.

Dr. H. P. Merriman.—As thirty-six hours elapsed from the time of the first symptoms until death, I would ask Dr. Robinson at what time he thought the intestines ruptured. The paralysis must have occurred some little time before this, while the woman was walking around and feeling comparatively well.

Dr. J. T. Binkley, Jr.—Dr. Etheridge's case is almost parallel with one I had a couple of weeks ago, and I certainly feel called upon to defend the position taken by Dr. Etheridge, for a good many reasons. Every one here who has had experience in general practice knows that we have just such symptoms as he describes arising in a great many instances from indigestion,

or from eauses we cannot determine. Irritation in the abdomen very frequently produces localized pain. A case under my care in the Chicago Hospital progressed beautifully for three or four weeks after abdominal section. An abscess then formed in the abdominal wall, which left a large sinus that closed slowly by granulation. About two weeks ago the patient was ready to go home, when in the middle of the night she was taken with symptoms such as Dr. Etheridge has described, but I did not feel that I ought to reopen the abdomen. The patient recovered and has gone home. She had indigestion, which was relieved by a hypodermic of morphine followed by saline cathartics. Dr. Martin and Dr. Robinson say they would reopen immediately. Dr. Robinson has recently written an article in which he condemns the immediate opening of the abdomen, especially in appendici-As he is careful to state that we must have the symptoms of pain, vomiting, localized induration, etc., before operating, I do not see how he can conclude so quickly that because this patient had pain he would immediately open the abdomen.

Dr. W. W. Jaggard.—I was very much interested in Dr. Etheridge's report and the inspection of the specimen. I do not think that the clinical history or the specimen furnishes facts sufficient to make any very exact etiological diagnosis as to the condition, nor to warrant any very dogmatic statements as to what ought to have been done under the circumstances. It looks to me as though the infection spread from the ligature to the intestine, and that there might either have been, and probably was, an actual ileus from obstruction, or there might have been simply a paralytic ileus, as indicated by Dr. Robinson. In either condition the rupture of the intestine seems to me to have been secondary to the general infection of the peritoneal cavity. In either event abdominal section, as suggested by Dr. Martin, seems to me to have been most strongly contra-indicated. It is an anachronism at the present time to open the abdomen for general peritonitis when the patient is in the article of death.

The case points an important moral as regards the operation of removal of the appendages. Unfortunately it is not an isolated nor is it a unique case. You put a silk ligature into an infected eavity, and the ligature is bound to become infected from the contents of the tube, and sooner or later, in a certain proportion of cases, there is bound to be trouble. A case recently came under my observation in which the tubes and ovaries had been removed and the woman was in a very much worse condition after the operation than before as regards the pain. She is bedridden. An abseess formed, and twelve months after operation a ligature was discharged through the bladder.

During the last year I have seen two cases of acute intestinal obstruction originating from a ligatured extremity of a tube that required operation, and these operations were performed by

no tyro, but by one of the most expert abdominal surgeons in

this or any other city.

The prognosis in this operation can be made better, and one way of doing this is to use some form of suture that cannot be infected and that will ultimately be absorbed. Recent experiments with chromic-acid eatgut indicate that in the following two respects it is preferable to silk: first, it is not so liable to infection when properly prepared; and, second, after a time it is completely absorbed. All the power in the human body cannot overcome germs once located in a silk ligature.

I think Dr. Etheridge is to be commiserated; he deserves, and certainly has, the sympathy of the Society. It is an accident that is liable to happen to any one who is obliged to use silk

ligatures in an infected cavity.

Dr. Henry P. Newman.—It is easy to criticise a method of treatment on the living subject, and to tell what we would have done under the circumstances, when we come to examine the post-mortem specimen. I think, with the indications as they existed in this case and the time and conditions as they were, secondary laparatomy was certainly not as strongly indicated as some of our Fellows insist. Cases where adhesions have occurred are subject to frequent attacks of colic or severe abdominal pain for protracted periods, and many of these cases survive for years with just such a history as that related by Dr. Etheridge. A patient recently came under my observation who had had two operations for the removal of tubes and ovaries. During the third laparatomy extensive adhesions to the old stumps were found. This case had suffered agonizing pains many times. She was brought here from Montana in a very critical condition. The adhesions were broken up, and two infected sutures, which were the cause of her suffering, removed. The woman was relieved, and went home cured, as we supposed; but I have since learned that she is subject to attacks of "cholera morbus." These adhesions may have returned. Some cases where adhesions have occurred certainly require operative treatment; in others it is questionable whether they should be subjected to repeated laparatomy.

I am under the impression, as Dr. Jaggard has outlined, that infection occurred in this case from the stump. It is possible, too, that there was some fraying-out of the broad ligament by the ligature at its point of constriction, resulting in a raw surface, to which this firm adhesion took place. As a rule adhesions are not firm in acute sepsis; they break down readily and are easily separated; but this is firm, adherent tissue, which cannot be separated, and its close continuity with the old stump, as well as some other manifestations, would lead me to suppose

that infection took place at that point.

Dr. F. Byron Robinson.—I must have been misunderstood; I had not the slightest idea of criticising Dr. Etheridge. It was

simply my interpretation of the symptoms. Dr. Binkley has either misread my article or I miswrote it, for I have never found more than one-third of indurations in all the cases of appendicitis I have ever seen. I think the infection occurred from the cut end of the tube, and not from the ligature which was buried in adhesions.

Dr. F. A. Stahl.—I would like to ask Dr. Robinson whether he has any success in these cases where he reopens immediately. It is of some interest to me as a general practitioner; there are times when we get cases with these symptoms which have been operated upon in a hospital. I remember a case a few months ago which had been operated upon by a member of this Society; the patient was sent home and was doing apparently well, when, unfortunately, her little baby fell down by the side of the bed. The woman suddenly leaned over to try and lift the baby up, and in so doing received an injury from which she died an hour and a half later. The symptoms were those of shock; there were no symptoms of hemorrhage. At first I thought of making a secondary laparatomy, but fortunately decided not to do so.

Dr. J. A. Lyons.—I have recently had a case similar to that reported by Dr. Etheridge. The patient was left in my care nine days after the removal of a large ovarian cyst. The bowels had not moved since the operation, and the doctor directed me to administer enemata and saline catharties, which produced no effect. I called in a consultant, who believed, from vaginal examination, that a fecal impaction existed and advised oxgall These were also of no avail; the patient gradually became worse, stereoraceous vomiting occurred, and the patient died on the following day. I favored reopening the abdomen, but was overruled by the consultant, who believed that eatharties alone were indicated. The post-mortem examination revealed an obstruction extending upward six inches from a point five inches above the anus, and firmly bound down by plastic exudate. I believe this was a ease in which reopening of the abdomen was indicated.

Dr. Franklin H. Martin.—The discussion has taken so interesting a course that I wish to make a little explanation. I based my remarks this evening on the history of the case as given by Dr. Etheridge, and not on the history of cases of temporary shock as described by Dr. Binkley and others. In abdominal surgery we often find cases where in two or three weeks after operation the patient is suddenly attacked with severe pain, the pulse increases at once to 130, 140, or 150, the temperature either becomes subnormal temporarily and then gradually rises, or from the start rises a little. In such a case I would not operate at once; if the patient is going to die within an hour she will do so before I can get ready to do the operation. Under these circumstances I would simply stimulate with hypodermies of nitroglycerin and strychnia, and apply dry heat. If then the

pulse begins to go down and the subnormal temperature to rise, I feel it is simply one of those temporary shocks occurring from an adhesive band giving way, a sudden change of position of the intestines, or some disturbance in the intestinal canal, and therefore no operation is necessary. If, however, in spite of stimulants and laxatives, the patient goes on twelve hours, the pulse going faster and faster and the temperature going down, I should give her the only chance left—an abdominal section.

The President.—I do not believe that obstruction by twisting occurred in this case. In obstruction of the intestine due to inguinal hernia or to volvulus, which occasionally happens, there is no difficulty in pointing out the exact seat of the trouble. There is usually an enlarged bowel above and a flattened bowel below, and the seat of obstruction can be located with great exactness. Strangulation frequently follows these complications.

That adhesions can occur without traumatism is certain, as has been proven conclusively. Sepsis leads at once to adhesions, and any one who makes post-mortem examinations in these cases will find numerous adhesions of the intestines. Paralysis may

lead to apparent obstruction of the bowels.

In regard to the stand taken by Dr. Martin as to reopening the abdomen, my experience is decidedly and most positively against reopening the abdomen unless there is a very distinct indication, much more than symptoms of collapse. I have reopened the abdomen in a number of cases, and each case has been followed by an antopsy. We all know how very few of these cases of secondary opening of the abdomen recover, that is, where sepsis has already developed after rupture. Very often an abdominal surgeon has a case which points clearly to rupture of a pus tube; he opens the abdomen and takes out the tube at once. I have had occasion to see those cases as attended by the general practitioner, and I will say that my opinion, based upon a fair number of such cases, is that if you have a rupture of a pus tube, and you can open the abdomen early while the patient is in a condition of collapse, death will be almost certain to follow within twenty-four to forty-eight hours. The history of these cases, followed out intelligently on strict medical lines, is that the patient lies in a state of collapse from twenty-four to forty-eight hours; after a few days, if the patient can be kept alive by stimulation and careful feeding, there comes a time when Nature throws out an exndate, and then the temperature usually falls and the other symptoms improve. About the fifth or sixth day chill and rise of temperature occur, which probably means that suppuration has taken place. This is the time for laparatomy. Immediate opening is followed by bad results, while mediate operation is followed by good results.

The discussion of this class of cases leads to the conclusion that it is necessary to have the right kind of ligature material, as so plainly pointed out by Dr. Jaggard. We all know the

difficulty of perfectly sterilizing catgut and of obtaining catgut that will not slip. Many operators use too thick silk. I think it better to use moderately fine silk; it is much less likely to infect the broad ligament. I have been in the habit of exclusively using Chinese silk, which seems to have an advantage over other varieties.

I always cauterize the end of the stump. I usually operate with the patient in the Trendelenburg position, so that I can see what I am doing. I do not think that we can make rapid laparatomy and still do perfect work. I regard the perforation in this case as absolutely unavoidable. There must have been some pathological condition which caused the rupture of the bowel,

and possibly some infection which favored rupture.

Dr. Etherioge, in closing the discussion, said: I think the value of Dr. Martin's criticism is exhibited in what he said on the subject of causes of adhesions of the bowels, which was so graphically alluded to by Dr. Robinson. A consultation was held in this case, and there was unanimity in favor of not operating; if Dr. Martin had been present his would have been the only contrary opinion. I think the most experienced laparatomists do not plunge headlong into the abdomen as soon as

they find a little trouble there.

At first there was some little digestive disturbance and the case was treated on that line. Two consultations were held, and the decision was against reopening. If the abdomen had been reopened the patient would certainly have died and the operator would have had the credit of killing her—not of course in the scientific mind, but in the opinion of the patient's friends. There was another peculiar thing about this patient which I did not mention, and which is perhaps not relevant to this discussion. It was very evident to my mind, from the white, fibrous. appearance of the intestine, that the contracture was of long standing. For several years she had had at times complete melancholia and had threatened to commit suicide; I did not learn this until after the death of the patient. The twist in the intestine, of which I spoke as a possible cause of the obstruction, was merely a supposition on my part, as I did not know to what else to attribute it. The only thing I wished to call attention to in exhibiting this specimen was the fact of the long, contracted intestine and the very unusual feature of the rupture of the bowel. Apparently the patient was awakened by the rupture. The adhesion to the broad ligament is so beautiful, pathologically, that I could not resist the temptation of exhibiting it.

REPORT OF CASE OF FIBROID TUMOR OF THE UTERUS, EXTENDING INTO THE LEFT BROAD LIGAMENT, REMOVED PER VAGINAM, WITH EXHIBITION OF SPECIMEN.

Dr. T. J. WATKINS.—Mrs. P., aged 35, had suffered for several months from continuous pain in the left inguinal region,

extending down the left thigh. Examination revealed a hard mass to the left of the uterus, which was diagnosed as a fibroid

of the uterus extending into the broad ligament.

After the usual preparatory treatment for operations in the vagina I operated on December 1st, 1893, in the following manner: About an inch and a half of the vaginal wall was detached by an incision around the left half of the cervix. connective tissue between the tumor and the vagina was easily separated by the finger. After incision of the capsule the tumor was enucleated. The peritoneal cavity was not opened. It was impossible to determine the amount of uterine wall external to the tumor.

The operation was attended by considerable hemorrhage, which was, however, readily controlled by packing with gauze. The gauze packing was removed on the third day. The patient made an uninterrupted recovery and left the hospital on the ninth day. The cavity rapidly diminished in size, and in two weeks the cicatrix was the only trace of the operation that remained. The tumor was spherical, two inches in diameter, and

composed of dense fibrous tissue.

Little is to be found in the literature regarding uterine fibroids which extend into the broad ligaments. Skene describes them, but considers their treatment under that of fibroids in general. Vaginal section for the removal of fibroids receives scant mention in the literature. Pozzi advises against vaginal operation for subperitoneal fibroids. Martin, of Berlin, says: "In cases of cervical myomata . . . not developed as subserous tumors into the floor of the pelvis . . . extirpation is to be undertaken from the vagina." Stansbury Sutton once divided the posterior wall of the vagina, and through the opening delivered a "supraperitoneal fibromyoma." He saw Martin, of Berlin, remove a small subserous tumor per vaginam, but does not state the location of the tumor or whether or not it was pedunculated. Sutton also says: "The tumors properly removed through the vagina are polypoid, submucous, and interstitial." Caselli 1 removed a subperitoneal fibroid of the cervix by splitting the vaginal wall which covered the tumor. Vander Veer eremoved a fibroid tumor by opening into Douglas' pouch. Czerny records three cases of removal of fibromata by vaginal section, with one death. Olshausen * removed a uterine fibroid by extraperitoneal enucleation through an opening made in the posterior vaginal wall. Gusserow 'says: "In a general way it may be stated

^{1 &}quot; Diseases of Women."

² "Medical and Surgical Gynecology," vol. i., p. 271.

^{3 &}quot;Diseases of Women," p. 277.
4 "American System of Gynecology," vol. ii., p. 577.

^{**} Annuali di Obs., 1881.

*Boston Med. and Surg. Journal, 1879.

*Wiener med. Wochenschrift, 1881, Nos. 18 and 19.

*Klin. Beitr. z. Gynäkol. Geburtsh., Stuttg., 1884, p. 96.

*' Cyclopedia of Obstetrics and Gynecology," vol. ix., p. 261.

that this method is applicable only to small tumors which are situated outside of the cavity of the peritoneum. Growths so situated are, however, very apt to cause considerable disturbance." Lomer' mentions a successful operation by Frankenhauser, and also one by Schröder, in which the tumor occupied the anterior wall of the uterus.

The case reported is the only one of fibroid extending into the broad ligament which has come under my observation. I believe that vaginal section is applicable to the removal of many small subperitoneal fibroids of the cervix uteri, in the enucleation of which it would not be necessary to enter the peritoneal cavity. In case of severe hemorrhage the uterine arteries could be ligated according to the method recently described and practised by Martin.²

This communication is made, not for the purpose of recording a unique operation, but to elicit discussion on uterine fibroids extending into the broad ligament, and on the applicability of vaginal section for the removal of subperitoneal fibroids of the

cervix uteri.

Dr. Franklin H. Martin.—I am opposed to abdominal hysterectomy for fibroid tumors, if it is possible to cure them symptomatically by a less dangerous method. I will say nothing about galvanism, which I have used for years, and with which I have been able to symptomatically relieve scores of cases. As my operation for ligation of the broad ligaments was mentioned by the operator, I will state that under the circumstances I believe I should have done as he did. The operation described accomplished the desired result with the minimum amount of traumatism and danger, and the greatest good to the patient in the shortest time. If there was but one centre of development, ligation of the broad ligament on the side containing the arteries which feed the tumor would undoubtedly eause it to shrink. The operation for ligation of the broad ligament is not yet old enough for us to say that collateral circulation may not be established later and the tumor grow again. But were it a question of ligating the broad ligaments for a simple interstitial fibroid, or of removing it by abdominal section (if for any reason electricity would not relieve the ease), I should advise ligation of the broad ligaments. It is a minor and comparatively simple operation when contrasted with an abdominal section.

Dr. F. Byron Robinson.—Only about five per cent of uterine fibroids are found in the cervix. I have seen Jordan Lloyd, Lawson Tait, and others remove such fibroids; and I helped Dr. Goldspohn, about a year ago, operate for a fibroid without pedicle in the broad ligament, and I have also removed one of the same variety per vaginam. The broad ligament has enough muscle

Zeitschrift f. Geburtsh. u. Gynäkol., vol. ix., p. 277.
 American Journal of Obstetrics, 1893 and 1894.

to develop a fibromyoma, as the platysma muscle originates from

the broad ligament.

Dr. W. W. Jaggard.—I want to say a few words as to the etiological diagnosis. It is consistent with the history of the case in the objective findings that it is not a subperitoneal myoma from the uterus, but a primary desmoid tumor of the uterus. Sänger pointed out, a few years ago, primary desmoid tumors of the uterus attached only by the connective tissue and originating primarily from elements in the broad ligament. It is not necessary to discuss what these elements are; there is a difference of opinion on that subject. Bayard Holmes, three or four years ago, presented a classical paper on primary desmoid tumors of the broad ligament which, I think, would throw some light on the diagnosis in this case.

I would like to ask Dr. Watkins what his reasons were for the operation. A primary desmoid tumor of the broad ligament does not often give very much discomfort; it is seldom the subject of malignant change. I do not doubt that there were reasons for the removal of this growth, but I do not remember that Dr. Watkins alluded to them. Why did he remove it? Why not let it alone, provided it was not the cause of anything that would threaten life or materially interfere with health?

Dr. T. J. Watkins, in closing the discussion, said: This tumor was not a fibroid of the broad ligament, because it was firmly attached to the uterus. The reason for the operation was, as already stated, for relief of pain. The only pathological condition this patient had, so far as I was able to determine, was the fibroid tumor. She had constant pain in the left side, extending down the thigh, which was so severe that it interfered with her rest. She has been entirely well since the operation.

EXHIBITION OF SPECIMEN OF VERMIFORM APPENDIX.

- Dr. T. J. Watkins.—This is a vermiform appendix which was attached to an abscess of the tube and ovary on the right side, and in its separation there was so much hemorrhage from the wall of the tube that it was advisable to remove the appendix. The method used was eminently satisfactory. Firm traction of the appendix was made, and then with a sharp scalpel the peritoneal coat of the appendix was incised. Still continuing the traction, I stripped back the peritoneum for about a quarter of an inch, and ligated and excised the appendix; I then pulled the peritoneum over the stump and secured it by means of a ligature. This method, although it may not be new, is, it seems to me, simpler and more efficient than most of the methods that have been devised for amputation of the appendix.
- Dr. F. B. Robinson.—The method of operating on the appendix described by Dr. Watkins is not new; if the doctor will read my "Practical Intestinal Surgery" he will find that three or four

years ago I ligated the appendix and then put the omentum or peritoneum over the stump. Whenever a wound in the abdominal cavity is covered with peritoneum adhesions are not likely to occur. A good method after amputation of the Fallopian tubes is to put a small piece of peritoneum over the stump. I have used the omentum for this purpose after removal of the appendix.

Dr. W. W. JAGGARD.—In regard to the modification of the appendix operation, as Dr. Robinson says, it is old; it is even more than four years old. It brings up a very important point: if you have a circumscribed space in the peritoneal cavity cut off from the rest, there is a good deal of evidence that no harm will come, no matter what the virulence of the secretions retained in that cavity may be. On this point Fränkel has suggested a very important modification that I have been on the point of applying in operations on the tube in just such a case as Dr. Etheridge's. He advises the pulling out of the epiploic appendages and sewing them to the uterus over the stump, so as to shut out the infected cavity from the general peritoneal cavity. It does not make any difference what the virulence of the poison may be, experience proves that if it is partitioned off from the general peritoneal cavity it does no harm; but this is still sub judice. In the last operation I did, about a month ago, I examined the epiploic appendages, pulled them out, and thought of sewing them over the infected stump, but instead of this I drained, and the patient recovered. I am sorry now I did not sew the epiploic appendages over the stump.

The case is very different as suggested by Dr. Watkins; he turns the infected stump into the connective tissue—that is, into a dead space liable to be infected. The clinical history of dead spaces—todten Räume, as the Germans call them—is familiar to you all. It is the one procedure in operations outside of the

serous cavities we want to avoid.

Dr. Watkins, in closing the discussion, said: I did not claim that the method by which this specimen was removed was new; my object was to show the ease and safety of amputation of the appendix by this method. The stump is not turned into a "dead space." Circulation is active in the muscular wall of the appendix. The amount of connective tissue between the muscularis and serosa of the appendix is so insignificant as to be unworthy of consideration. If the ligature becomes infected it will escape into the cecum and therefore cause no trouble.

Dr. W. W. Jaggard.—I wish to present this specimen, first, because Dr. Etheridge is present, and, second, on account of its interest. The specimen is a beautiful example of

DECIDUAL ENDOMETRITIS,

a form of endometritis that does not receive sufficient attention in the modern text books on midwifery, particularly the American text books.

This mass that I hold up is the ovum covered by the decidua The only lesions are the enormously thickened apoplectic decidna, that is also infiltrated with white infarcts. The history of this case is interesting. For the last four years I have presented to this Society a strictly similar specimen from the same patient. She has had seven miscarriages in ten years, each at the same time, the tenth week, and each presenting the same lesions, a decidual endometritis, with the death of the fetus as the result of malnutrition. I learned the other day that she had at one time been a patient of Dr. Etheridge and that he had attended her in two miscarriages. The husband had syphilis in 1875; he is a large, vigorous man; he was put under a very rigid treatment by Fournier in Paris, and subsequently by Dr. Etheridge, who, I believe, also subjected the wife to specific treatment. However, she had her miscarriages the same as before. This miscarriage occurred three or four days ago. The important item is as to the causation in this case. I think syphilis can be excluded with a high degree of probability. husband does not show the slightest trace of syphilis, and the wife has been subjected to the severest treatment, kept up for a sufficient length of time, and both individuals are in the most perfect general health. During the last year I have had her more closely under observation; I find she is the subject of desquamative or exfoliative endometritis, and I am inclined to attribute the miscarriage to exfoliative endometritis rather than to specific taint on either side. I urged her as strongly as I could to permit me to use the usual remedy for exfoliative endometritis-namely, curettage-but she refused until this miscarriage occurred.

MARTIN'S OPERATION FOR VAGINAL LIGATION OF A PORTION OF THE BROAD LIGAMENTS IN UTERINE FIBROIDS: A QUESTION OF PRIORITY.

To Dr. E. J. Doering,

President, Chicago Gynecological Society.

ESTEEMED SIR:—In the January number of The American Journal of Obstetrics I read the Transactions of your Society of November 17th, 1893. I send to you the following remarks in relation to the communication of Dr. Martin, "On Six Cases of Ligation of the Broad Ligaments for Uterine Fibroids," with the request that they be read at the next meeting of your Society and printed in its Transactions.

As you will perceive from the accompanying reprints, I recommended, in a communication to the International Congress held at Brussels, September 16th, 1892, the bilateral ligation of the uterine vessels by way of the vagina as the best treatment for the early stages of uterine myoma. I had performed my first operation December 30th, 1891, by the method that has

long been adopted by every one in total vaginal extirpation—viz., provisional separation of the bladder and lateral ligation of the base of the broad ligaments with silk. Since this operative procedure has been long known, I considered it superfluous, in consideration of the shortness of time, to describe it again.

My second publication was on March 10th, 1893, in a communication to the local obstetrical and gynecological society here

(Centralbl. f. Gyn., November 15th, 1893).

My third publication is that referred to by Dr. Martin on page 105, quoted from the *Centralblatt*, No. 39, of August, 1893; it was written in the nature of a reply to Prof. Küstner, and is an extension of my former statements. Dr. Martin appears to have known only of my last publication, and not to have seen the two preceding ones.

Dr. Martin's communication in the April number for 1893 reached me at the end of May. His first case was operated upon November 15th, 1892, about eleven months after mine, and two months after my publication in Brussels. His first publication

followed eight months after mine.

I see nothing novel in the method described by Dr. Martin. All operators have thus tied the uterine vessels in every case of total vaginal extirpation. That the nerves—of Frankenhauser's ganglion centrum—are also embedded in the ligature is a matter of course from their anatomical position and needs no special mention.

I will willingly, nevertheless, admit that Dr. Martin has independently discovered this operation. But since I put it into practice eleven months before him, and published it eight months earlier, it cannot possibly be called after him.

Very respectfully yours,

S. Gottschalk.

Berlin, M. Stieglitzustr. 49, February 22d, 1894.

REPLY TO PROF. SIGMUND GOTTSCHALK'S LETTER TO THE CHICAGO GYNECOLOGICAL SOCIETY.

Prof. Gottschalk does me the honor, in which I trust my colleagues here will acquiesce, of admitting that I have indepen-

dently discovered an operation.

The question at stake, however, is not that of originality, but of priority. In order that Prof. Gottschalk's priority claim may be of any value to him, he must first prove that the idea and execution of the operation in question had priority with him. Again, in order that the claim for priority be recognized by the profession, he must prove that he first published and described his idea and technique in recognized periodical literature. Finally, not to make his claim of priority for my operation ridiculous, he must show conclusively that the theory, execution, and description of his operation were identical with mine.

First, then, did the idea and execution of tying the uterine artery as a cure for fibroids of the uterus have priority with Gottschalk? Only partially. An American, Dr. Walter B. Dorsett, in a paper read before the St. Louis Medical Society on May 17th, 1890, entitled "A Case of Atrophy of the Female Genitalia following Pregnancy, and Remarks," said: "I believe that in the treatment of uterine fibroids, whether submucous, intramural, or subperitoneal, . . . to ligate the uterine artery would not be an unscientific procedure. On the contrary, the more I have thought of it the more I am inclined to believe that it would be the most rational and at the same time most certain mode of treatment." He then describes a technique which involves the ligature of the uterine artery through an incision in the vaginal vault. Dr. Dorsett, while presenting the theory, had not at that time carried it out on a living patient. The fact of the execution was not published. The suggestion, theory, and technique contained in the article the title of which I have quoted was published in the August, 1890, number of the St. Louis Courier of Medicine, or over two years before Gottschalk published his first article.

Second, can Prof. Gottschalk prove that he first published and described his ideas and technique in recognized medical literature? Again no. In an article read at the Brussels Congress, September 16th, 1892, on "Die Histogenese und Actiologie der Uterusmyome," he had a few paragraphs bearing on this subject. He said: "The bilateral ligation of the uterine arteries appears to be the therapeutic measure in this regard for the earliest incipient stages of myoma. This offers no difficulties in its technique; it is easily performed in a few minutes." "I have already performed this ligation in two cases in which I was able to early diagnose the development of multiple myoma, with best results." He gives us no technique; he limits the operation to

incipient myomata.

These suggestions, in an article the title of which I have given above, were published in Archiv f. Gynükologie, Bd. xliii., Heft 3, which reached the Newberry Library of Chicago April 4th, 1893. We have seen that Dorsett published his idea and technique over two years before Prof. Gottschalk read his paper at Brussels, also that Gottschalk did not publish the technique in his first article; nor do we find anything on the subject of technique from him until he refers to Küstner's criticism on this very point in September, 1893. This proves conclusively, I believe, that the priority of suggestion and description, if not of execution, of ligating the uterine artery as an operation per se for uterine fibroids, lies, not with Prof. Gottschalk, but Dr. Dorsett.

Third, not to make his claim of priority over me ridiculous, he must show conclusively that the theory, execution, and description of his operation were identical and prior to mine.

My operation, as described in my first article (before I had learned of the work of Dorsett or Gottschalk), differed from

theirs in three essential features:

1. I included in all cases the whole base of the broad ligament, in order (a) to include not only the main channel of the uterine artery, but all collateral branches; (b) in order to include the nerves as well as the arteries of nutrition; (c) in order to diminish nerve reflexes.

2. I included in desperate cases not only the base of the broad ligament with the uterine artery and branches in my ligatures, but, when practicable, ligated high enough on one side to include

the ovarian artery.

3. I advised accomplishing this result, if possible, without opening the peritoneal cavity, but by doing so if necessary.

Prof. Gottschalk says: "I see nothing novel in the method described by Dr. Martin, as all operators have thus tied the uterine vessels in every case of total vaginal extirpation." I consider that decidedly juggling the case. We all admit that all operators have thus tied the *uterine vessels* in every case of total vaginal extirpation; so do they all tie in the same operation both ovarian arteries, and occasionally the Fallopian tubes; but that does not necessarily imply that Prof. Gottschalk or any other operator would proceed to tie all these structures in simply ligating the uterine artery. His operation, as we can judge of it from the paragraph already quoted, implies ligation of the uterine artery pure and simple.

In the April number of The American Journal of Obstetrics, 1893, I published my first article on ligation of the broad ligaments, giving minute description of technique, theory of action, and execution, illustrated by two cases. Five months later, on September 30th, 1893, in reply to Küstner, Gottschalk first published his technique in the Centralblatt für Gynäkologie, No. 39, which coincides with mine, not only in its minutest details, but also in description, as far as the two operations could be

alike.

I cannot agree with Prof. Gottschalk that the incidental including of the nerves of the broad ligament, or ligation by deliberate forethought, needs no special mention. Take almost any organ or portion of the body of an animal, and deprive it of its nerve supply in one instance and of the arterial supply in the second, the fact will be demonstrated that the greatest disturbance and change of nutrition will occur in the organ deprived of its nerve supply. Again, ligate a large artery to a given portion of the body in two animals, and in one include also the nerve supply: in the portion of the animal in which the artery alone is ligated collateral circulation will become established in a few hours or days, while in the portion of the animal deprived of both blood and nerves collateral circulation will be restored

very slowly, frequently never, and the nutrition of the part will

suffer greatly.

Prof. Gottschalk in his letter completely ignores my second point of difference—viz., the including of the ovarian artery on one side. He likewise ignores my third point of difference, or my suggestion to disregard the peritoneum if it becomes necessary to penetrate it in order to accomplish the desired result.

Starting, then, from our original proposition: 1. Did Prof. Gottschalk first suggest the idea and execution of the operation in question? No; since that was done by Dr. Dorsett in May, 1890, or more than two years before Prof. Gottschalk's paper at the Brussels Congress. 2. Did Prof. Gottschalk first publish and describe his ideas and technique in recognized medical literature? Again no; since Dr. Dorsett published the idea in May, 1890, while I myself described in detail the technique, as far as it applied to ligation of the uterine artery, five months in advance of him, or in April, 1893. 3. Does Prof. Gottschalk show that his theory, execution, and description are identical with mine? A third time no; inasmuch as the operation claimed by Prof. Gottschalk includes but one of three important features of the operation claimed by me.

Finally, as Prof. Gottschalk has brought up the delicate matter of whose name my operation should bear, I submit, as the completed operation was described, executed, published, and named by me independently and without the knowledge of similar but minor work in the same direction, that the operation should be known as Martin's operation of vaginal ligation of the

broad ligaments for uterine fibroids.

Yours very truly,

FRANKLIN H. MARTIN.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI.

Meeting of February 22d, 1894.

The President, WM. H. TAYLOR, M.D., in the Chair.

FIBRO-CYSTIC TUMOR OF THE UTERUS.

Dr. Zinke.—Mrs. X., et. 47; very much emaciated; mother of one child born twenty years ago; never had a miscarriage. Has not felt well since the birth of the child. A tumor was first noted eighteen years ago, and had grown steadily until it now filled the whole of the abdominal cavity. The tumor was fluctuant two inches above the symphysis and solid below that

point. The solid mass of the tumor filled the pelvic cavity so that the os externum could not be reached except by forcing the

finger high up between the growth and the symphysis.

Diagnosis.—Fibro-cystic tumor of either the uterus or ovary, or a fibroid tumor of the uterus complicated by a large ovarian cyst. The patient was very weak; temperature every afternoon 101°; pulse 130, wiry and compressible. Her physical condition was such that even operative interference promised very little. On the 16th of this month a free incision was made in the median line, eight inches in length. A cyst, universally adherent, presented itself. The adhesions were very strong, firm, and exceedingly difficult of separation. The tumor was punctured with a trocar, with a view of emptying it, and a large amount of chocolate-colored fluid escaped. After reducing the tumor in size I found it impossible to separate the adhesions, and most of them had to be ligated and severed by the knife. After it was freed anteriorly and from the omentum and intestines above, I attempted to get my hand behind to separate the adhesions there. In this attempt I broke through the cyst and its contents freely flooded all of the abdominal viscera. After a good deal of hard and persistent work I succeeded in eventrating the growth, but it proved impossible to liberate the solid portion from the pelvic cavity, and I was obliged to fix this large and solid mass in the abdominal wound. About twenty hypodermic injections of whiskey, as well as a transfusion of sterilized salt-water solution, had to be made to keep the patient alive long enough to get her off the table. The following morning the temperature was 99°, the pulse 130. She died of exhaustion forty-eight hours after the operation. The fluid removed from the cyst consisted of degenerated fat globules; no streptococci could be discovered. The tumor had its origin in the posterior wall of the uterus.

TOTAL VAGINAL EXTIRPATION OF A FIVE MONTHS' PREGNANT UTERUS FOR CARCINOMA OF THE CERVIX.

Mrs. X., et. 39, mother of a large family, the youngest 4 years of age, was referred to me by Dr. Koehler, of this city, who had made a diagnosis of carcinoma of the cervix. My examination confirmed his view, and vaginal hysterectomy was advised and accepted. There was a strong suspicion that the patient was pregnant, but it was impossible, even on very careful examination, to determine this with absolute certainty. She was a very large and fat woman, with a pendulous abdomen, and this greatly interfered with a satisfactory examination. The operation was performed February 10th at the German Hospital. After the separation of the cervix from its attachments I became aware that pregnancy existed. There was nothing to be gained by hesitating. To proceed and remove the whole of the pregnant uterus was the only solution. After removal of the uterus the

organ was incised and a four and a half months' fetus escaped. The patient is now, one week after the operation, doing well (was discharged cured five weeks later). It is probable that, had I known positively of the existence of pregnancy, I would not have operated upon this woman; and yet, had the operation not been done, I would certainly have placed her life in great jeopardy, because a fatal result would have been almost inevitable at term. Notwithstanding I did this operation without being in possession of all the facts of the case, I have done the very best thing for her.

Dr. Reed.—We ought to appreciate a member of the Society who will bring a cheerless case, such as the first, and give us an experience which was certainly very trying. Of course we cannot find any fault with Dr. Zinke for leaving the operation in a state of incompletion. The only criticism—and I do not offer this as an adverse one—is that in a case like this we ought to undertake the operation for exploratory purposes and to determine the feasibility of removal. It is an exceedingly fine point in judgment to determine just when to drop exploratory measures and to undertake the radical measure of the completed operation. I am perfectly well aware that our best intentions and our best judgments in this connection sometimes miscarry, that we sometimes find ourselves confronted by a set of circumstances that render retreat impossible; in other words, having gotten in, there is no place left for the completion of the operation, until perhaps we find ourselves in the very midst of the most serious of complications. This woman could not have lived long; she would have died shortly of symptoms resulting from pressure. The temporary hemostasis is certainly effective; yet, considering the intimate relations of the superimposed viscera, it is a question whether it were not better to retire earlier in the game; and yet perhaps it is just as well as it is, for the woman would have been miserable all the time and have died soon.

In reference to the second case, the management of pregnancy, in the case of cancer of the cervix, is a subject which has engaged the attention of men the world over, and about which a great deal has been written the last few years. Where diagnosis becomes practicable before operation, and where there is a reasonable prospect of the patient going through the period of gestation successfully so far as the child is concerned, non-interference is the line to be followed. In that line Cesarean section should be the method of delivery. But we must all recognize the fact that diagnosis is extremely difficult. The usual changes in the cervix, the usual changes in coloration and consistence of the cervical tissues, are gone; the chance of making a successful bimanual examination is gone, for the immobility of the uterus, and the condition of the tissues which have undergone degeneration, preclude the necessary manipulations. This leaves but few methods for the detection of pregnancy. Something over a year ago I made a cervical amputation for the very reason that there was that complete fixation of the uterus and engorgement of the lateral tissues which would make the complete extirpation impracticable and essentially worthless. The results were as satisfactory as could be expected. The patient regained her strength and went about her duties. But two months ago I received a startling letter from her physician, who said she had then passed four and a half months of pregnancy and there could be no doubt as to the diagnosis. In that case we have an illustration of what may happen. Either in eases in which we have done the amputation or in cases in which the disease may go on in an indolent way for considerable time, one of the dangers of delay in operation is incurring pregnancy. I remember a case reported before our State Society, from the practice of our friend Dr. Reamy, in which amputation was practised during pregnancy, whether as a matter of election or for the relief of an otherwise incurable case I do not now pretend to say. In that case the woman lost her life simply from inability to expel the fetus per vias naturales, perhaps for the want of Cesarean section. These cases are constantly coming before us, and it does seem to me we should hold this before the patient as one of the possible dangers of delay. Of course the line of practice, when possible, is to save the child's life. That is considered one of the criterions upon which to shape our practice. I observe that rule, yet I do not think any tears ought to be shed over the loss of fetal life under such circumstances as these.

Dr. Bonifield,—How thick was the cyst wall?

Dr. Zinke.—It was quite thick where you see it, but anteriorly and above, as well as posteriorly, parts occurred a quarter or even an eighth of an inch in thickness, so that at the time we exposed it we believed we werein the presence of an ovarian cyst, and therefore I made an attempt to deliver, and when I had my hand posteriorly it ruptured and I had to act as I did. Had I recognized the true character of it before, I should have sewed the sac to the abdominal wound and turned out the contents, filled it with iodoform gauze, and let it take care of itself. It was an exploratory incision. I promised the people at the time that if I saw I could not remove it conveniently I should not attempt it. I have seen cases with thick walls in which I had no difficulty.

SALPINGO-OÖPHORECTOMY.

Dr. Reed.—I have a specimen which has long ago lost its novelty to this Society, and which I present only because it has some value in connection with the associated circumstances of the case. It is an ovary with the tube attached, which I removed this morning. The patient was a woman who four years ago had an attack of what the medical man in attendance called

idiopathic peritonitis. It was characterized by chills, the temperature rising and falling, and all the clinical phenomena of abscess. Two years later she had another attack, which kept her in bed several weeks. She was successfully treated by large doses of opium, and got well after having a number of subcutaneous abscesses. The doctor said her blood ran down under the influence of the peritonitis and it gave rise to boils. Now, I was called to see her last summer. I found on the left side of her pelvis a large mass. I found her under most distressing circumstances. The temperature at that time was 103°; she had a rigor; there was a great deal of intrapelvic tenderness. There had been a death in her family, and certain things made it almost impossible for her to have surgical attendance at the time; the Pan-American Medical Congress was about to assemble, and all these things prompted me to do something I had never done in any other case. I tapped through the wall of the vagina and took off nearly four ounces of pus. She recovered in the course of two days and was sitting up and taking on flesh. When I returned early in the autumn she seemed to have fully recovered, and I failed on examination to find any tumefaction in the pelvis. She thought she was well, but as a matter of candor I told her the trouble would probably recur. A few weeks ago she again returned and I found the abscess present again. She wanted it tapped, but I refused, telling her we had temporized long enough and I was only inviting her to a fatal neglect if I continued. Laparatomy was done and it was removed. I explored the other side and found the Fallopian tube adherent at its fimbria, but not entirely occluded. I raised the ovary, brought it into view, found it was apparently healthy so far as the parenchymatous structure was concerned, that it was surrounded by some diseased tissue, which I removed, dusted its surface with aristol, and dropped it back. I think by using aristol readhesion is prevented. I operated in this way because the patient is a young woman, exceedingly anxious for children, in whose life the element of maternity is an exceedingly important one, and who prayed me, if there was a possibility of leaving that function intact, to do so. Whether she will ever realize her hopes I do not know, but Martin has placed on record some cases in favor of this conservatism.

Dr. Bonifield.—I have seen Martin return the ovaries after incising and examining them. He amputates the end of the tube and sews the peritoneum to the nucous membrane when inflammatory changes have occluded the fimbriated extremity of an otherwise normal tube, and drops them back. He always

sponges the parts with olive oil to prevent adhesions.

Dr. Zinke.—I have been very much interested in the case reported, because of my recent experience with two similar cases. In both instances I have been obliged to stitch the tumor to the abdominal wound, and, after evacuation of the contents,

fill the sac with iodoform gauze. The last case is still under treatment and will recover; the first one died of sepsis one week after the operation. In the first case I found, besides the abscess of the ovary, what I regarded to be a tubal pregnancy. Subsequent microscopic examination confirmed this view. After ligating the tube the product of conception (one month) was turned out. The abscess of the ovary involved the broad ligament, and, because of the strong adhesions, could not be liberated. It was then stitched to the lower angle of the wound, incised, the pus evacuated, and the cavity packed with iodoform gauze. No trouble arose from the ectopic gestation. The difficulties attending the operative treatment of these cases must be apparent to every one, and not infrequently the most skilled and experienced surgeon will be baffled. The doctor is to be congratulated in succeeding so well.

Dr. Palmer.—If I can recall the case Dr. Zinke refers to, it was one of ovaritis and chronic pelvic peritonitis, in which I extirpated the ovaries. I have never experienced so much difficulty in taking out the ovaries as I did in that case. I do not know the duration of the operation, but I think it must have been over an hour. That woman recovered slowly, and menstruated with perfect regularity for months afterward. She was operated upon again by another, and died. I imagine that the reason the woman menstruated was because I did not extir-

pate all of the ovarian stroma.

Dr. Reed.—Have you ever seen a third ovary?

Dr. Palmer.—I never have; I believe they have been found about eight times in three hundred and fifty autopsies by Bigel.

Meeting of March 8th, 1894.

STERILITY.

Dr. Palmer.—I do not think I exaggerate when I state that there is no more unsatisfactory condition to diagnose or to treat than sterility. It is sometimes extremely difficult to determine exactly what is the cause, when you are perfectly assured the fault does not lie on the male side of the house by an interrogation of the male and perhaps by a microscopical examination of his spermatic fluid. And, having determined the cause, it is not by any means always easy to rectify it.

Gonorrhea is one of the most frequent, even the most frequent, causes of sterility in the female; it exists often when not expected. Aside from gonorrhea the most common cause is an imperfect development of the uterus. The organ is small, the cervix is elongated and conical, there is the pinhole os externum, and often anteflexion. Years ago the treatment of the conoid cervix and pinhole os externum was to incise it; then followed the use of tents, but I think these have pretty well

gone out of use; then came dilatation by means of the metallic dilator; and since we have had dilatation by means of galvanism. I have had several cases in the last ten years in which conception has followed the use of galvanism. In all cases there was more or less of the conoid cervix and the pinhole os externum. The case to which I particularly refer was one sent me two years ago. She had no leucorrhea and was in good general health. The prospects seemed good that she might be cured of her sterility. I commenced the dilatation of the os externum and the cervical canal by means of galvanism. I passed one electrode through the cervical canal, and the other I placed over the abdomen. The current was applied for fifteen minutes twice a week for several months. After a married sterile life of seven to eight years she is now pregnant in her eighth month. have seen similar results follow this treatment in other cases. It is a well-known fact that the positive pole applied within the uterine canal has one effect and the negative pole another. The positive pole is a hemostatic and contracts the cervical canal. If you want to induce the menstrual flow or expand the cervical canal, use the negative pole. I am disposed to think this is one of the best methods of treatment in these cases, because it is comparatively painless, because it is comparatively safe, and because it leads to a permanency of results which is not otherwise attained.

Dr. Mitchell.—Aside from gonorrhea, we all agree the most frequent cause of sterility is probably a rudimentary uterus. A rudimentary uterus necessarily means rudimentary ovaries and tubes. These are the cases in which we have the most painful form of menstruation and are most difficult to treat. I have no confidence in either electricity or dilatation, or in any other method for the cure of sterility in this class of cases. My experience, although not very large, has justified this opinion. I use electricity a great deal, and, notwithstanding what the text books say as to the application of the positive and negative poles, I feel sure it makes very little difference whether you use one or the other, except that the negative pole is a little more irritating; the results are about the same.

Dr. Bonifield.—I cannot agree with Dr. Palmer that the uterus will be as tight as ever a few weeks after dilatation. I frequently have these cases come back to my office a month or two months after a rapid dilatation, when I can pass a very much larger sized sound than I could before. Of course it does contract to a certain extent, but I do not believe it will get back to where it was in the first place within a year, especially if packed tightly with iodoform gauze and kept in a stretched con-

dition for from one to five days after the operation.

DR. WHITE.—I cannot agree with Dr. Mitchell as to it making no difference which pole is used in the cervical canal. In the first place, it is a well-known fact that if the negative pole is

use the negative pole.

introduced the flow of blood will increase and the pole will slip out very easily; but introduce the positive pole and you will find it difficult to displace it. One acts as a hemostatic, decreasing the flow of blood; the other increases the flow of blood and at the same time increases the vascularity. With regard to the dilatation, I am in favor of Dr. Palmer's method. Always

Dr. Palmer.—I am surprised at the remark of Dr. Mitchell that there is no difference in the polar effects. You can develop the uterus to a degree with the negative pole that you cannot do with the positive pole. You invite a flow of blood with the negative pole, while you induce a contraction with the positive. As to the permanency of the results, I cannot be mistaken. Again and again I have noticed that after using tents or the dilator, unless the cervix is lacerated and remains ununited, the contraction will return, generally in a few weeks. In these cases of so-called infantile uterus, with conoid cervix and pinhole os externum, it does not follow that there must be a similar involvement of the ovaries and tubes. Judging from the physiological action of the ovaries, there is every reason to believe that the ovaries in many of these cases are developed sufficiently, so that, if the nterus is correspondingly developed, conception will occur and gestation be completed. In all the cases I have referred to gestation has continued. one of them parturition is due within two months.

UTERINE POLYP.

Dr. Giles S. Mitchell.—The patient, a married lady, blonde, sterile, æt. 40, I saw for the first time one year ago. At that time she complained of menorrhagia, and had also during the intermenstrual period a semi-purulent discharge, so offensive that when I first examined the case I suspected she had malignant disease. A careful examination of the patient at that time revealed a uterus with a cavity five inches in depth. Of course I suspected there was a large fibroid tumor, but, after making a careful examination with the patient under ether, so far as I was able to determine the uterus was enlarged equally in every direction and no tumor existed. I carefully curetted the cavity of the uterus, removing probably half a teacupful of débris, which appeared macroscopically to be sarcomatous tissue. From that time until three months ago she was comparatively well. Three months ago the profuse menstruation returned, accompanied by considerable pain. She made her appearance at my office about two weeks ago, when I made an examination and discovered what I suspected to be a very small mucous polypus. She was within a few days of her menstruation, and I thought it was so trivial a matter that I would take it off with a Jarvis snare which I have for the removal of nasal polypi; but I soon found it had its attachment further up and was larger than I

anticipated. After her menstrual period she went to the Presbyterian Hospital, when upon examination I could not see the tumor, and the os was so small I was unable to introduce even the tip of my finger. I dilated the cervix as much as possible without tearing it, and I then discovered that what I had supposed to be a polyp was a fibroid as large as a hen's egg and had its attachment at the fundus. In order to get at the neoplasm it was necessary to make bilateral incision of the os. The tumor was then dragged down by means of a volsella forceps, and by the aid of another pair of forceps I slipped the wire écraseur over the growth and succeeded in cutting it off.

VARICOSE PAROVARIUM.

Mrs. E., blonde, married, at. 28, mother of two children, both born prematurely. Date of last confinement, January 10th, 1893, since which time she has suffered almost constantly in spite of intelligent treatment. Operation February 24th, at Presbyterian Hospital, Drs. Withrow and Hyndman assisting. The right ovary, enlarged and cystic, was prolapsed and bound down by firm adhesions. Left ovary and tube only slightly diseased. The most interesting feature of the specimen is a varicose condition of the vessels of the parovarium. From the sense of touch I at first thought the mass of dilated vessels was a supernumerary ovary, but visual inspection revealed at once its true nature. Owing to the firm adhesions it was deemed best to insert a drainage tube, which was removed thirty-six hours later. Three hours after operation three ounces of blood were pumped out through the tube. She is now, from a surgical standpoint, well.

Dr. Hall.—The first specimen is particularly interesting to me from the fact that about ten days ago I removed a polypus about the same size, with nearly the same conditions present, from a colored woman, æt. 50, who had had a similar growth removed twice before within two years, and each time by competent physicians. She had been bleeding several months quite freely, but for the last six months had changed very much in color, so that now she is like yellow-pine wood. Strange to say, neither specimen removed before has been examined microscopically. This last specimen has been examined by two different men, each without the knowledge of the other, and both say it is sarcoma. In the case just reported, possibly, when the specimen is examined, you may find it is more than a simple myoma.

Dr. Stark.—It has been my fortune to meet with quite a number of these cases, and I am impressed by the frequency of one experience I have met with in the clinical history. The patients almost invariably tell me that they menstruate for two days and then it ceases, and then they have a flow for five or six days. When I examined them I have almost invariably found a fibroid present. I do not know whether the experience of

others is similar, and would like to hear something on that point. I formerly removed them with a snare of some kind, but recently I find it only necessary to snip off the pedicle, which is a much easier method than the introduction of the snare. About five months ago I removed one from a woman who had lost a great deal of blood and was very anemic, and in that case I found it impossible to get the snare around the tumor, because it filled out the entire uterine cavity. It was a firm, submucous fibroid, and still by simply pressing the pedicle and snipping it off I had no trouble. I left a tampon in a few days, and there was no

subsequent hemorrhage whatever.

Dr. Bonifield.—I do not believe there is any danger in cutting the ordinary fibroid polyp off with scissors, if the pedicle is small and it has been completely extruded from the uterus. I have frequently done so and never packed the uterus, and had no hemorrhage to speak of. The most interesting case of this kind I have seen I saw a few years ago with a gentleman in the suburbs. He said he had delivered a patient about a week before. The day before asking me to see her he examined her and found the uterus inverted and the body filling the vagina. I went out to see the case with him, and on a casual examination I was inclined to agree with his diagnosis; but after putting the patient under an anesthetic and examining more carefully, I found the cervix, and the pedicle of a polypus issuing from it. The growth was probably as big as a cocoanut or larger, and after removing it with the scissors we had no trouble. About two years ago I removed a polypus, a little larger than a hen's egg, over in Newport. Recently I was called to see the patient, and found another polypus similar to the first. They were hard specimens and not like the one exhibited.

Dr. Wenning.—The case reported by Dr. Stark recalls to my mind a case, which I saw a year ago, of a woman, æt. 45 years, who had menstruated irregularly for some time, and had excessive pain so that she had acquired the morphine habit. The pain became so excruciating that she sought relief, among others, from two gynecologists in the city, who pronounced it due to extra-uterine pregnancy. On examination I found the uterus enlarged to about the size of four months of pregnancy. I was very particular in the examination, and after thoroughly examining it I came to the conclusion it was either an intrauterine pregnancy or a polyp. Dr. Trush agreed with me. I said, if it was a pregnancy, an abortion would result in a few days, and if not a pregnancy there would be time to wait. The woman when seen next was in extreme pain. We placed the patient under ether, and on introducing the fingers we discovered a body, evidently a fibroid polyp. She was sent to St. Mary's Hospital, and the next day I removed the growth, without much difficulty, with the scissors. For this purpose I have found the snare very unsatisfactory. After removing it I curetted the base. The patient experienced relief at once.

Dr. Mitchell.—I do not remember that hemorrhage after the removal of a fibroid polyp is ever regarded as an element of danger. It seems a very easy matter to enucleate or cut off with a pair of seissors a small fibroid polyp, but in this case there was a history of several attacks of peritonitis, the uterus was not easily dragged down, and, after I had dilated with the Goodell dilator and made a bilateral incision of the cervix, it was difficult to introduce my finger, and it seemed to me easier to slip a wire over it than to try to cut it off with the scissors. I have removed polypi very easily in which the tumor did not fill up the entire uterine cavity or had become extruded into the vagina. The chief point of interest is the mistake I made when she called at my office: I thought it was a mucous polyp and that it had its attachment near the os externum. However, before she left the office I found the attachment was higher up. The uterus now measures only about three and one-half inches; at the time I saw her, a year ago, the uterus was fully five inches. I expect to have a microscopical examination made of the tumor, but I do not think it is malignant.

Dr. C. A. L. Reed.—At the last session of this Society I exhibited a specimen which I had just removed, and which I supposed to be an abscess of the ovary. It was an ovary with the tube attached. The specimen was not opened at that time, but since then an incision has been made by Dr. Bettman and the pus evacuated. It is a beautiful specimen, probably papillomatous. I wish to show this and incorporate it in the report of the specimen I presented at the last meeting. It is a beautiful

specimen, the like of which I have never before seen.

I have here another specimen, which I wish to present in the fewest possible words. I was called to a neighboring city to operate for what had been diagnosed as a fibroid tumor of the uterus. I arrived in the morning, and found a tumor filling the abdomen well up to the ensiform cartilage. On vaginal examination this same tumor occupied the left iliac fossa and pressed far down into the excavation of the pelvis, pushing the cervix, occupying a position to the right of the tumor, high up and posteriorly. I proceeded to operate, and, on making my incision down to within an inch and a half of the pubes, I suddenly came to a point where the parietal peritoneum was reflected over the tumor. In other words, I had to deal with an extraperitoneal myoma. Slipping my hand over the growth, I discovered the uterus occupying a position quite independent of the growth, still posteriorly and to the right of it. Somewhat enlarging my incision at the upper angle, I then lifted up the peritoneum and enucleated the growth extraperitoneally. This was an exceedingly difficult matter, as you can readily understand from this specimen. I found the growth, a pear-shaped myoma, occupying the left iliac fossa. Getting my hand under the peritoneum, I had little difficulty in stripping it up; then, not endeavoring to remove it from its nest down in the iliac fossa, I

encountered bands, which I divided with my fingers, simply cutting them off. Going around on the right side of the tumor, I found I got under a deeper capsule than I had found on the other side. I simply tore up the capsule, lifted the growth out, and it was absolutely without a pedicle. It left an enormous opening in the pelvis, from the surface of which there was considerable oozing. I had to do considerable ligating en masse. On examination I made the unpleasant discovery that in dividing the large band I had divided the ureter. I permitted this to stand in statu quo for the time, and addressed my attention to the uterus, which I found to abound in myomatous nodules. I found, when I had lifted up the peritoneum, I lifted it up to the fundus of the uterus anteriorly. I took out the uterus, tied off the tubes to either side outside of the peritoneum, simply clipping off the appendages internally without ligature. This proved to be entirely satisfactory, and for the purpose of closing the peritoneum required only a single stitch. I then stitched the peritoneum, which had been lifted from the pelvis, fast to the margins of the abdominal incision, thus entirely closing off the peritoneal cavity. But before I did so I made a lateral anastomosis of the ureter. Although she was in the Trendelenburg posture, it was exceedingly difficult to draw that segment down so I could get at it easily. I drew the renal end of the ureter into the cystic end and then closed it around in the usual way. On the following day the bowels moved, and she has been taking nourishment from the start. I packed the peritoneal cavity with iodoform gauze, bringing the end out through the vagina. When this was removed about an ounce of urine escaped. For the last two days no urine has been passed from it. I used silk sutures in the ureter.

TRANSACTIONS OF THE WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY.

Meeting of April 7th, 1893.

The Vice-President, H. D. Fry, M.D., in the Chair.

Dr. J. Foster Scott read a paper entitled

PATHOLOGY AND TREATMENT OF PERIUTERINE PELVIC INFLAMMATIONS. 1

Dr. E. L. Tompkins said he would take exception to Dr. Scott's recommendation of the use of alcohol and water to sponge

 $^{\scriptscriptstyle 1}$ See original article, p. 803.

the body with a view of reducing temperature. He thought the alcohol was objectionable, as it hardened the skin; water

was preferable.

Dr. A. F. A. King said that Dr. Scott's paper was very complete. It would be interesting to consider the causes of these conditions. Dr. Scott said that most of them originated from endometritis. They seem to be of more common occurrence than formerly, or is it that diagnosis is more accurate now than then? Preventive methods should be sought after. As to the use of alcohol with water, he said the alcohol was added to increase the evaporation, and to that extent it was advantageous. In his early gynecological practice he had used leeches to the vaginal portion of the cervix with advantage, but they were troublesome. He thought that superficial scarification was better.

Dr. W. Sinclair Bowen said that as sepsis was the cause of these pelvic inflammations, antiseptic midwifery was the best

preventive.

Dr. H. D. Fry said he arose to commend the views set forth in the paper. Formerly it was held that this pelvic inflammation was a cellulitis, but the modern view that it was tubal disease was well established. Tait was early in demonstrating this. It arises by direct extension from the uterus to the tube. Cellulitis might develop after laceration of cervix by transport of germs through lymphatics. He gave an illustrative case, in which he evacuated pus under Poupart's ligament.

Dr. J. Foster Scott said that Dr. King had answered the objection of Dr. Tompkins as to the use of alcohol. Alcohol was refrigerant and cleansing, and aided in removing impurities

from the skin.

He said that while the majority of cases of pelvic inflammation were of the form considered in the paper, he maintained that there was cellulitis developing from lesions of the cervix through lymphatics. Its origin was almost invariably from puerperal cases. Inoculate the cervix in any way and cellulitis might follow.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Meeting of April 4th, 1894.

The President, G. E. Herman, M.D., in the Chair.

Specimens.—Dr. W. H. Tate: Ruptured tubal gestation. Dr. W. Duncan: Fetus and placenta from a ruptured tubal gestation. Dr. Ettles: Fetus cyclops.

ON CASES OF ASSOCIATED PAROVARIAN AND VAGINAL CYSTS FORMED FROM A DISTENDED GÄRTNER'S DUCT.

This paper was read by Dr. Amand Routh. Details of three cases of the above are given, and also of two analogous cases of patency of the whole length of the duct, with an anterior opening allowing free discharge and thus preventing distention of the duct along its course.

Comparison is drawn between such cases and those of dis-

tended but imperforate Müller's ducts.

Evidence adduced from these cases is thought to establish, or

at least to render plausible, the following propositions:

1. That Gärtner's duct can be traced in some cases in the adult female from the parovarium to the vestibulum vulvæ, ending just beneath and slightly to one side of the urethral orifice.

2. Homology tends to show that Max Schüller's glands are diverticula of Gärtner's ducts, just as the vesiculæ seminales are diverticula of the vasa deferentia. Some evidence is given that Skene's ducts are not necessarily identical with the anterior termination of Gärtner's ducts (as most of those who have traced Gärtner's duct to the vestibule have thought), but that Skene's ducts lead directly and solely from Max Schüller's urethral glands, Gärtner's ducts being continued to the vestibule behind, but parallel to, Skene's ducts.

3. That Gärtner's duct, if patent, may become distended at any part of its course, constituting a variety of parovarian cyst if the distention be in the broad-ligament portion, and a vaginal cyst if the distention be in the vaginal portion. The cases described are instances of the association of both of these cysts, owing to simultaneous patency and distention of both portions

of the duct.

4. Attention is drawn to these cases as affording explanations of some obscure cases of profuse watery discharge from the

vagina, not coming from the uterns or bladder.

5. The question of treatment is also approached, and the opinion is expressed that where the whole duct is distended the vaginal part of the cyst may be laid open as far as the base of the broad ligament, and the broad-ligament portion encouraged to contract and close up.

Mr. Alban Doran thought that if eysts of the parovarium and vagina were found in the same subject, the theory that the vaginal cysts were developed from Gärtner's duct was thereby supported. Fschel found that in one human fetus the duct ran into the cervix, and, turning upward, ended in a blind extremity without reaching the vagina. This did not prove that the tube did not at an earlier stage of development run further. Mr. Bland Sutton's theory as to the homologies of Skene's tubes might be perfectly correct, even if Gärtner's ducts

could be traced running outside the urethra and ending in the vestibule. Skene's tubes might have been cut off and displaced at an earlier stage—a common phenomenon in embryology. Vaginal cysts tended to burrow upward, so as to come in contact with the parametrium, peritoneum, and large vessels; hence their total extirpation was rarely advisable. In this they differed from large cysts of Cowper's glands, which could not burrow in the same direction.

Dr. Oliver did not consider vaginal cysts so rare as was usually supposed. During the last twelve months he had had six cases, two of which he believed originated in Gärtner's duct. One of these contained three ounces, the other six ounces, of a fluid similar to that found in parovarian cysts.

The President thanked Dr. Routh for his paper, which contained exact and careful observations and laborious research into the preceding work of others upon the difficult subject

discussed.

Dr. Amand Routh, in reply, said he was glad to find Mr. Doran and Mr. Bland Sutton in the main agreeing with him in his conclusions. The latter had suggested that the cyst laid open might have been a distended ureter, but this could hardly have been so, as it granulated up after incision. He had not found the lining of the cyst anywhere papillomatous.

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An American Text Book of the Diseases of Children. Including special chapters on Essential Surgical Subjects; Diseases of the Eye, Ear, Nose, and Throat; Diseases of the Skin; and on the Diet, Hygiene, and General Management of Children. By American Teachers. Edited by Louis Starr, J.D., Physician to the Children's Hospital, etc., Philadelpia. Assisted by Thompson S. Westcott, M.D., Attending Physician to the Dispensary for Diseases of Children, Hospital of the University of Pennsylvania. Philadelphia: W. I. Saunders, 1894. Pp. xiv-1190.

This book, we are told by the editor, is designed as a working text book which shall completely cover the field of pediatrics without being stictly encyclopedic in character. It is the work of about sixty catributors, and presents many of the faults as well as the merit of a book prepared in that manner. Theoretically, a work witten by a staff of collaborators selected from the most important medical centres will secure for each subject consideration by the authority best fitted to portray it. Practically, such a book catains numerous weak articles, much repe-

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tition, and lacks unity and oneness of purpose. While the editor of this work has attained his aim in a large degree, he has also failed in certain directions. Each person will differ in his opinion as to the relative importance of different subjects. In the present work, it seems to us, the allotting of space to the different subjects has not been entirely judicious. Tracheotomy at the present day does not merit twenty pages, more space than is devoted to the very important subjects of croupous and catarrhal pneumonia. Many obscure and very rare nervous diseases are treated with more detail than their importance warrants. The article on cholera is well up to date and extremely interesting; it is, however, far better adapted to a work on general

practice than to one on pediatrics.

The chapter on the chemistry of milk, by Dr. Leeds, is of very great interest and practical value. That on exercise and massage is truly a wonderful production. Those portions which are intelligible contain some very remarkable statements. We are at a total loss to understand why a complete dietary should be introduced under the head of massage. One of the best chapters is that by Osler on tuberculosis. Chapin's on syphilis is also worthy of special notice. Diphtheria, by Dillon Brown, is well treated, but the almost complete omission of pseudodiphtheria renders the subject incomplete and quite unsatisfactory. The article on malarial fever, by Thayer, is extremely good, as is also that by Da Costa on rhenmatism. The clapter on anemia by Packard, and those on hemophilia and scurvy by Northrup, are worthy of especial mention. Our knowledge on these subjects has greatly increased during recent years and is very satisfactorily presented by these writers. The secion devoted to the digestive organs is not up to the standard of some other portions of the work. Vaughn's elassification of acute and chronic intestinal indigestion and milk infectior is novel and can hardly be commended. Most of the articlesupon nervons disorders are earefully written, and some of them are extremely good. The general criticism on this part of the book is that already referred to—the undue importance given to certain rare disorders. The chapters on pneumonia are to much condensed, and are not sufficiently clear-cut. Christoner's chapter on bronchitis and Koplik's on pleurisy present hese diseases most satisfactorily. Organic diseases of the heat, which have received very inadequate attention in most presons American works on pediatrics, are accorded full and adquate treatment in Crandall's article. The various chapters of the diseases of the kidneys and bladder are good, but, bein divided among several writers, lack unity.

It should not be inferred from these critics that the work has on the whole fallen far short of the edter's high purpose. While certain articles show but little originality or have been written carelessly or with undue haste, but at the larger num-

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ber are well written and reflect credit on their authors. The work is an excellent one, and presents the subject of pediatrics more satisfactorily for the American physician than any other single volume yet published.

With a few exceptions the illustrations are very good, and the

typography throughout is beyond reproach.

A Manual of Nursing in Pelvic Surgery. By Lewis S. McMurtry, A.M., M.D., Professor of Gynecology in the Hospital College of Medicine, Louisville; Surgeon-in-charge of the Jennie Casseday Infirmary for Women; Gynecologist to Sts. Mary and Elizabeth Hospital, etc. Pp. 92. Louisville: John P. Morton & Co., 1894.

This little volume does not pretend to be an exhaustive treatise on gynecological nursing, but is content to give in a clear, simple, practical way, avoiding controversial points as far as possible, the operative methods in which the author's experience and his extensive observation in the special hospitals of this country and Europe have shown him to be practically efficient.

It gives a general idea of the anatomy of the pelvic region; an explanation of the principles governing asepsis and antisepsis; tells how to prepare instruments and patient for operation; what to do and what not to do during the operation; how to care for the patient afterward; what complications to be on the alert for; and how to prepare for operations in a private house.

While the individual operator might differ with the author regarding one or another detail, the book as a whole is excellent, and any nurse who masters and carries out the instructions given will be a safe and competent person to leave in charge of any case in pelvic surgery.

THE JOHNS HOPKINS HOSPITAL REPORTS. Vol. iii., Nos. 7, 8, 9. REPORT IN GYNECOLOGY. Pp. 764. Baltimore: The Johns Hopkins Press, 1894.

This volume forms a valuable contribution to gynecological literature, being a report of original experiments, and a careful study of the clinical material of the gynecological division of the

Johns Hopkins Hospital.

The high standard of the publications from the Johns Hopkins Hospital is well known, and we hardly need to state that the printing, paper, and illustrations are of a degree of excellence one would expect of a work from this peerless institution. We believe that the character and literary merits of the work may be best appreciated by appending brief abstracts of a few of the essays.

Kelly describes a new external direct method of measuring the conjugata vera. It is essential that the gynecologist should second the efforts of the obstetrician to recognize contracted

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pelves before or during labor, the structure of the bony pelvis being often the keystone of explanation of the prime cause of

the disease under investigation.

The measurement is made by simply pressing the extended hand, with palmar surface down, through the abdominal walls until the tip of the middle finger rests directly over the promontory of the sacrum and the palm rests on the symphysis pubis. This distance is then measured on the examining hand. The chief sources of error arise either from measuring directly over the summit of the symphysis, or from pressing the finger tips against the promontory instead of over it, thus interposing the thickness of the abdominal wall.

The second essay is also by Kelly. He describes a case of prolapsus uteri without participation of the bladder in the prolapsus, and with a hernia of the small intestines into a sac anterior to the uterus. The anterior wall of the vagina, covering the anterior portion of the prolapsed sac, was completely everted from the urethral orifice to the cervix, while the posterior wall presented a depth of about seven centimetres within the pelvis. Cases of anterior enterocele are of rare occurrence, being rendered infrequent by the narrowness of the ante-uterine pouch and by the protection afforded by the superincumbent bladder.

A cure was effected by the removal of an oval piece comprising the whole thickness of the anterior vaginal wall, which was closed by continuous catgut sutures, then the vaginal outlet was firmly lifted under the pubic arch by a symmetrical bilateral denudation extending well into the sulci.

A collection of cases of lipoma of the labium majus is the subject of the third paper (Kelly). These tumors may be mistaken for cysts when the fat is soft, or for elephantiasis when the fibrous tissue in the septum is in excess. A large lipoma, with its pedicle extending up over or through the inguinal canal, may easily simulate an inguinal hernia. The treatment is removal of the growth. The day has long passed for attempting

to cure such tumors by injecting them with alcohol or other fluids or by ligating the pedicle.

Deviation of the rectum and sigmoid flexure associated with constipation are sources of error in gynecological diagnosis. Kelly reports a number of instances gathered from his note book. A scybalous mass behind the uterus may be mistaken for a pyosalpinx; a mass on the left side behind the broad ligament has been diagnosed a diseased ovary. When both the lower sigmoid flexure and the rectum are loaded the abdomen is filled with irregular hard masses, and grave suspicion may readily be entertained as to the existence of malignant disease, countenanced by the complaints of suffering and the somewhat cachectic appearance of the patient. The presence of feces will be suspected from the location of the tumor. The elongate, nodu-

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lar character of the mass is suggestive; instead of being fixed, as malignant tumors, it is movable. The tenderness, which may be marked, is not excessive and does not increase greatly upon increasing the pressure. In some instances it is possible by a little combined pressure to indent the tumor sufficiently to recognize its character, but frequently this is not practicable.

In all cases of pelvic tumors a rectal examination should be made, and this at once establishes the diagnosis pro or con fecal

tumor in the pelvis.

Kelly reports forty-five operations in cases of retroflexed uterus. The uterus may be efficiently suspended by one of two methods: first, by two ligatures of silk or silkworm gut passed on either side through the peritoneum and subjacent tissue, about two centimetres away from the abdominal incision and parallel to it, and then around each utero-ovarian ligament. When these

ligatures are tied the uterus is lifted up into anteflexion.

The second method consists in passing two silk sutures through the peritoneum and subperitoneal tissue in a transverse direction and about 1.5 centimetres from the incision. The suture is then carried through a part of the body of the uterus, on its posterior surface near the fundus, and then through the peritoneum as on the opposite side. The two ends of the suture are brought out of the incision and tied, bringing the uterus and anterior abdominal wall into close apposition. It is an essential feature of these operations that the uterus should be held in anteflexion by attaching its posterior surface to the abdominal wall. In many of the earlier operations the round ligaments and the anterior surface of the uterus were utilized. This placed the uterus at a serious mechanical disadvantage, as it simply hung by its weight in anteposed retroflexion. In five cases the uterus was brought forward by shortening the round ligaments intraperitoneally. This operation failed either in keeping the uterus in place or in relieving the suffering, and was therefore abandoned.

Forty-five cases were operated on after the first two methods, all ending in recovery. One patient has since borne a child and

passed through a normal puerperium.

Dr. Mary Sherwood made a series of experiments for the purpose of testing the relative value of potassium permanganate and oxalic acid as germicides.

The conclusions from these experiments may be thus briefly

summarized:

1. Potassium permanganate in saturated solution does not sterilize threads infected with staphylococcus pyogenes aureus or albus, either at room temperature or at a temperature of 45° C. by exposure from one to ten minutes.

2. Exposure of infected threads to saturated solution of potassium permanganate for one minute, followed by oxalic acid in saturated solution for one minute, is not sufficient at room tem-

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perature to destroy all organisms, although retardation of growth is accomplished in some cases.

3. Oxalic acid in saturated solution at room temperature does not in all cases sterilize infected threads which are exposed to its action for one minute, although retardation of growth, and

in some cases no growth, is observed.

4. Oxalic acid at a temperature of 40° to 45° C. sterilizes infected threads by exposure of one minute to its action. This occurs also when oxalic acid is preceded by permanganate. Under certain conditions, therefore, oxalic acid is a more power-

ful germicide than permanganate of potassium.

Dr. Albert L. Stavely publishes a brief but interesting paper upon intestinal worms as a complication in abdominal surgery. Several remarkable instances of complications occurring in abdominal surgery through the presence of ascarides lumbricoides have been observed. From August to November, 1891, a period of four months, six cases were complicated in this way. In five the parasite was ascaris lumbricoides, and in one tenia mediocanellata. A lumbricoid worm has been found provocative of such alarming symptoms following laparatomy as to raise a question as to the existence of peritonitis or ileus.

The most constant symptoms observed were a peculiarly persistent nausea and severe vomiting, accompanied by colicky pain, disturbed breathing, anxious expression, palpitation, and a general feeling of malaise—a complex of symptoms quite different from the simple persistent nausea and discomforts frequently observed following the anesthesia. Headache, abdominal pains, tympanites, and hysteria were also peculiar signs apparently due

to the presence of worms.

There was no such elevation of temperature or extreme tympany, associated with an incessant bilions vomiting, as is frequently seen with the advent of septic peritonitis. The symptoms in most of these cases were of a peculiarly explosive character, accompanied with more violent manifestations than are usual in septic cases. It is difficult to formulate a theory which will adequately explain such marked phenomena from a cause so trivial.

The employment of an artificial retroposition of the uterus in covering extensive denuded areas about the pelvic floor is the subject of a paper by Kelly. In pelvic inflammatory disease in which the posterior surface of the uterus, the ovaries, and tubes are matted together by dense adhesions, the enucleation of ovaries and tubes is often attended with injury to wide areas of peritoneum, on the pelvic floor, lateral and posterior pelvic walls, posterior surfaces of the broad ligaments, and posterior face of the uterus. How to deal with this extensive raw area is an important question; for if left to itself the small intestines and the omentum will, in many instances, gravitate downward, filling up the lacuna left by the enucleation, and be

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detained by adhesions, which may prove a constant source of distress to the patient after her recovery, or may even occasion a This difficulty has been overcome in a number of instances by the following device: After the conclusion of the operation the uterus, which is frequently enlarged, is turned backward in retroposition, either still anteflexed or gently retroflexed, so that the fundus rests at about the second sacral verte-It thus resembles a uterus in the first stage of descensus. reclining in the sacral hollow, the convexity of the slightly anteflexed retroposed uterus fitting the concavity of the lower sacral hollow. In this position the posterior lower pelvis is completely covered in by the body of the uterus and the broad ligaments, which are turned backward. The smooth, uninjured anterior face of the uterus with its broad ligaments forms the floor of a new pelvis. It is rarely necessary to carry one or two sutures into the uterus through the fundus, thus fastening down to the rectum. It is often sufficient simply to push the uterus down so that it rests in the posterior part of the pelvis to protect the raw area. Where drainage is required gauze is packed on top of the uterus, instead of the pelvic floor, and extends out through the incision.

No untoward symptoms were observed in any case in which this expedient was employed; no pain, no constipation, and no

disability were noted after recovery.

Gynecological Operations not involving Celiotomy. By H. A. Kelly and A. L. Stavely.—This paper gives a brief analysis of the minor operations performed in the gynecological department of Johns Hopkins Hospital from March 3d, 1890, to January 1st, 1893. In this time 815 minor gynecological operations were performed upon 631 patients, with three deaths.

The most important operation in the list is resection of the relaxed vaginal outlet, which is the term always used by the writer to describe the operation for the condition commonly called "laceration of the perineum not involving the sphincter." This term is descriptive of the boggy, gaping outlet, dilated by the anterior and posterior vaginal walls crowding down like a wedge when the patient is on her feet or exerts herself.

This condition most frequently occurs in women who have borne several children, the outlet having failed to recover its normal tonus after the extreme distention from the successive heads passing through it. The proper treatment of such a relaxation is a resection, removing the excess of tissue and contract-

ing the opening down to the normal size.

The Emmet operation contains the correct principles, attacking the area of relaxation within the hymen and extending up the sulci. Kelly, in common with other gynecologists, carries the denudation further up the sulci.

Trachelorrhaphy is performed for lacerated cervix in two classes of cases: in the first, when the lips of the cervix are

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infiltrated, thick, and everted, and commonly associated with a subinvoluted uterus; in the second, when the tear exists, without much infiltration, but associated with subinvolution of the uterus.

For prolapsus uteri three operations are usually performed: a supravaginal amputation of the cervix, an anterior colporrhaphy, and an extensive resection of the relaxed vaginal outlet. Hemorrhoidal operations are often performed after completing a vaginal operation; the hemorrhoids being treated either by excision and closure of the wound with a continuous suture, or by injection with a solution of carbolic acid in glycerin (twenty-five to thirty-three per cent strength). Not more than two or three minims are injected into each hemorrhoid, and never more than ten minims are used at one operation. There is usually only slight discomfort after the injection. Vaseline or glycerin and rose water or simple ointment may be applied to the part.

Nothing demonstrates the recent progress of gynecology so well as the combined operations, in which one, two, three, or

even four are performed at one sitting.

The general principles of combined operations are these:

1. The time consumed in keeping the patient under anesthesia must not be longer than that required for one continuous operation.

2. While a patient may easily stand a considerable loss of blood from one operation, she should not be subjected to two

operations, each entailing serious hemorrhage.

3. After a septic operation sound tissues, especially the peri-

toneum, should not be invaded.

4. Operations should not be performed which interfere with one another. Thus the vaginal outlet should not be resected for a relaxation where it is important to have free drainage through the vagina, as after vaginal hysterectomy or the removal of a placenta.

5. Operations should follow in a sequence which will avoid interference with one another. Thus repair of the cervix should precede suspension of the uterus, as the uterus ought not to be

subjected to traction after the suspension operation.

6. As a rule, if an abdominal and a vaginal or rectal operation

is to be performed, the former should come first.

Some Sources of Hemorrhage in Abdominal Pelvic Operations. By Howard A. Kelly.—Death from hemorrhage occurring shortly after an operation is doubtless of rarer occurrence to-day, because of the extreme care exercised by abdominal surgeons in the application of the ligature to the stump containing the main blood vessels, in assuring themselves that its constricting power is sufficient to control the circulation, and in cutting the pedicle far enough away from the ligature to avoid the possibility of retraction of the tissue beneath the loop of the ligature.

It is better not to include the whole breadth of the broad liga-

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ment in one or two ligatures, but to use three or four—two in the broad ligament, and one at each extremity to control the uterine and ovarian vessels. Where the whole broad ligament is gathered up in one or two ligatures, dangers arise in the later stages of the operation from the pulling upon the side tied first in handling the uterus.

Omental and intestinal adhesions often give rise to persistent oozing, and should never therefore be released until the hemor-

rhage is under control.

An accident of frequent occurrence, and yet unnoted, is the great liability of the ovary, during the enucleation in cases of pelvic inflammatory disease, to tear loose from its hilum. These tears always bleed freely. The only resource is to clamp the bleeding points with two or more forceps, and then catch the vessels in their continuity by encircling them with two or more

ligatures.

Photography applied to Surgery. By A. S. Murray.—An important field for photography has been for the first time brought into use in the Johns Hopkins Hospital—that is, an effort by this means to crystallize a sufficient number of important steps during an operation from commencement to completion, so that by producing the photographs in the same order a fairly accurate conception of the operator's methods may be obtained. The effect of the photograph is much enhanced when the negative is converted into a lantern slide and the operation reproduced in life-size on a large screen.

It is impossible to do justice to the author's suggestions in the space of a brief abstract, and we must refer those interested in

this line of work to the original article.

Traumatic Atresia of the Vagina with Hematocolpos and Hematometra. By Howard A. Kelly.—The patient, a negress about 22 years old, had been a constant sufferer since her first labor, eight years previously, which was terminated by prolonged and severe instrumental interference. Since that time she has never menstruated, although suffering from monthly molimina. Previous to her pregnancy she had menstruated with regularity. She entered the hospital complaining of severe abdominal pain. Upon attempting to enter the vagina the finger passed into a large, capacious, smooth-walled sac, which was found to be the bladder. The urethra easily admitted two fingers. Below the urethra a whitish pit, composed of firm scar tissue, represented the position of the vagina. The upper portion of the vagina was distended with retained menstrual secretions; the cervical portion of the uterus had also become converted into a sacculus, while the upper part of the uterus was likewise distended. The enlargement of the urethra was due to repeated coitus through this organ. The sexual act was accompanied with pain and a flow of urine. She was able to retain her urine about a half-hour.

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The operation consisted in thrusting a large trocar into the sac and evacuating about sixteen ounces of thick, tarry blood. A dilator was then introduced and the parts widely torn asunder. The edge of the vagina, above the raw area, was dissected free on all sides for about one centimetre in the form of a collar, and, sliding this down, it was sutured to the uninjured outlet. At the time the patient was discharged the vagina admitted a No.

23 bougie.

Urinalysis in Gynecology. By W. W. Russell.—Only catheterized specimens of urine give reliable indications in gynecological patients, as a large percentage of women suffer more or less from leucorrheal discharge, often containing pus and blood. This discharge is often mixed with the urine in the act of voiding, and, reacting to the tests for albumin, gives rise to erroncous inferences. In the analyses of the urine from thirty patients, both voided and catheterized for comparison, nine of the voided showed albumin, while the catheterized specimens were negative. In these nine cases the patients had marked leucorrhea. The practical results of an analysis of two hundred cases are:

First, pelvic disease does not occasion renal disease of serious

nature in a very large percentage of gynecological cases.

Second, the presence of albumin, even in a large amount, is

not significant unless casts are present.

Third, the presence of small granular and hyaline casts does not contra indicate operation, unless vascular lesions and associated symptoms indicate renal disease.

Fourth, diminished secretion following operation is not unusual, and need not occasion alarm as to the possibility of a ureter being ligated or any serious interference with the renal function.

Fifth, persistent diminished exerction, associated with elevated temperature and increasing rapidity of pulse, is not due to ne-

phritis, but to septicemia.

The Importance of Employing Anesthesia in the Diagnosis of Intrapelvic Gynecological Conditions. By Hunter Robb.— If a patient presents a history with even a suggestion of pelvic disease a thorough examination should be made as soon as The great majority of gynecological cases cannot be satisfactorily examined without the aid of an anesthetic. complete anesthesia mistaken diagnoses are often corrected, and where any doubt concerning the case exists a positive opinion should not be given before resorting to this expedient. Complete anesthesia is necessary, as it is often impossible to palpate the structures thoroughly if there is the slightest resistance. The patient should lie across the mattress or on a table, the buttocks on one edge and the legs separated and flexed on the thighs. The bimanual method of examining is the most satisfactory. If a satisfactory examination cannot be made by the combined vaginal and abdominal manipulation, then palpation

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by the rectum may be employed, either alone or in combination with the abdominal and vaginal touch. It is seldom necessary,

however, to resort to rectal examination.

Resuscitation in Chloroform Asphyxia. By Howard A. Kelly .- In spite of the most careful attention during the administration of chloroform, an alarming asphyxia occasionally occurs. In such cases not a moment must be lost, but immediate efforts must be made to revive the patient. Fifteen cases were treated with uniform success by the following method: The administration of the anesthetic is instantly suspended and the wound protected. An assistant steps upon the table and takes one of the patient's knees under each arm, thus raising the body from the table until it rests on the shoulders. In the meantime the head has been brought to the edge of the table, where it hangs extended. The patient's clothing is pulled down under her armpits, completely baring the abdomen and chest. The operator, standing at the head, institutes respiratory movements as follows: inspiration, by placing the open hands on each side of the chest posteriorly over the lower true ribs, and drawing the chest forward and outward, holding it there for about two seconds; expiration, reversing the movement by placing the hands on the front of the chest and pushing backward and inward, at the same time compressing the chest. From ten to thirty of these acts of induced respiration will usually suffice to excite voluntary respiratory movements.

One Hundred Cases of Ovariotomy performed on Women over Seventy Years of Age. By H. A. Kelly and Mary Sherwood.—Two cases of successful ovariotomy performed recently at the Johns Hopkins Hospital on patients aged respectively 73 and 75 years suggested the desirability of collecting statistics

of similar cases.

The main facts emphasized by a study of a hundred cases may be thus briefly summarized:

1. That ovariotomy in the aged presents no essential differences from this operation in cases of younger years.

2. That the rate of mortality from this operation on patients over 70, as shown by results in one hundred cases, is twelve per cent.

3. That the indications and contra-indications for ovariotomy in the aged are essentially the same as for this operation in

general.

Besides these papers the volume contains a description of the new gynecological operating room, a report of about five hundred abdominal operations performed from March 5th, 1890, to December 17th, 1892, and notes of the autopsies upon all patients dying in the gynecological wards. It is evident that much valuable information can be elicited from a critical study of these reports. Most of the essays are illustrated by a large number of excellent photographs, which greatly enhance the value of the work.

TRANSACTIONS OF THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. Volume vi., pp. 388. Published by the Association, W. E. B. Davis, Secretary, Birmingham, Ala., 1894.

This volume contains the thirty-one papers presented at the meeting held last November in New Orleans. It is equal in interest to its predecessors, though a larger proportion is devoted to topics of general surgery. The gynecological papers include an "Address in Memory of Ephraim McDowell," by McMurtry; "The Diagnosis of Pelvic Inflammatory Disease," by Kelly; "The Conservative Treatment of Pyosalpinx," by Kollock; "The Incision in Abdominal Section," by Price; "The Vaginal Route in Pelvic Operations," by Engelmann; "The Diagnosis of Tumors supposed to be Ovarian," by Goggans; and "Does Gonorrhea in the Female invariably prevent Conception?" by Wilson.

Transactions of the American Association of Obstetricians and Gynecologists. Volume vi., for the year 1893. Edited by Wm. Warren Potter, M.D., Secretary. Pp. 308. Phila-

delphia: Wm. J. Dornan, 1894.

Many of the articles contained in this instructive volume have already appeared in this Journal for August and September, 1893, where a full abstract of the proceedings of its last meeting may be found. The high average value of the papers maintains the growing reputation of the society, while the discussions are noticeably fearless in their criticism.

ABSTRACTS.

1. Mundé, Paul F.: Treatment of Mammary Abscess by Compression (The Medical Annual, 1894).—I first began to employ compression by a large wet sponge for the cure of mammary abscess about the year 1875. I do not recollect precisely how my attention was first called to the method, but. so far as I know, the idea was original with me, and I never before saw it applied or heard of it being used for abscesses of the breast by any one else. I rather think that my experience as an army surgeon in the treatment of large superficial abscesses and suppurating sinuses by compression with properly fitted unopened roller bandages and wads of cotton, or sponges, led me to apply the same principle to abscesses of the breast. The ease with which the mamma can be compressed against the flat, unyielding surface of the thorax by roller bandages or broad cloths renders abscesses of this organ most adapted to this method of treatment. The object is, by steady, uniform, gentle compression, to keep the cavity of the abscess free from

pus and serous accumulation, and, by holding the walls of the abscess in apposition, to induce the fresh granulations to unite

and thus close the cavity.

This treatment is, of course, applicable only to fresh abscesses with healthy granulating walls capable of agglutination and union. Where the abscess has persisted for some weeks or months, and the interlobular cellular tissue of the gland has been destroyed by suppuration, and only broken-down, unhealthy granulations exist, the removal of this diseased tissue by the curette, and packing with iodoform gauze until the wound has assumed a healthy granulating appearance, must precede the closing of the cavity by sponge compression. This, however, is not the class of cases to which I first applied my method, and still I have succeeded in curing two cases of old, chronic mammary abscess, one of three months', the other of a year's duration, in this manner, without the use of knife or curette. In both instances, it should be stated, however, that the abscesses, or rather sinuses, were superficial, and therefore more amenable to this treatment. Both were entirely well in less than two weeks.

My method is very simple, and this simplicity has required but very little modification since its inception. It consists in the proper selection of the case (viz., a fresh abscess, not an old, neglected, necrotic cavity), a large, flat, coarse bathing sponge, two large three-cornered cloths (unbleached muslin or very large square handkerchiefs folded from corner to corner) or a broad, long roller bandage, a piece of oiled silk large enough to cover

the sponge, and some large nursery pins.

The modus operandi is as follows: The patient presents herself with a large fluctuating abscess of the breast; this is opened by one moderately large radiating incision at the most dependent point, the pus is gently expressed, and the abscess cavity irrigated with a 1:10,000 bichloride solution or, what is probably just as good, plain boiled (sterilized) water, all of which is gently squeezed out, and the abscess cavity closed by gentle manual compression by the patient herself, while the other dressing is being made ready. The sponge, which has been previously thoroughly cleansed by boiling and has been freed from sand and other impurities, is now fitted to the shape of the collapsed breast by hollowing it out in the centre with scissors so as to admit about one-half of the organ. It is then soaked in as hot water as can be borne by the hand, rapidly squeezed out in a towel, placed over the breast so as to entirely envelop it, covered with the piece of oiled silk, and then uniformly and evenly compressed against the thorax with the roller bandage or with the two three-cornered cloths, the first cloth being applied over the lower part of the breast and tied or pinned behind the neck, the other straight around the thorax. Compression should be as tight as the patient can comfortably bear. The other breast, I

must not omit to mention, must be protected by a covering of cotton wadding.1

This dressing is left undisturbed until the next day, except, if necessary, tightening the bandages, as they may become loose. On the following day the whole dressing is removed, the sponge washed in hot water and reapplied as at first; and this procedure is repeated every day until the abscess is completely healed, which, in my experience, has seldom been longer than a week. Indeed, the cavity is usually closed after the third daily dressing; but, to avoid possible pocketing of pus through uneven application of the compression, it is well to examine the breast carefully each time, and, if such pocketing is found, either express the pus through the original incision or make a new opening. I have never known this occur when I myself applied the dressings, for I have always been particularly careful to adhere to the indispensable axiom of success—that is, uniform, even compression of the breast from the periphery toward the centre, and from the surface toward the thoracic wall.

Occasionally, especially if the abscess has been opened and this method employed while there was still an unsubdued cellulitic induration of a part of the gland, the original abscess may be healed by compression and an additional fresh abscess form by its side, which should then be treated in the same manner. However, I have known a mammary abscess to refuse to close under the routine treatment of drainage tube, gauze packing, and irrigation, which produced a secondary infiltration about the wound, and heal completely within a week, with entire disappearance of the infiltration, under hot wet sponge compression. It is seldom necessary to change the sponge dressing oftener than once in the twenty-four hours. In properly selected cases the method is so simple that I can remember, when I first began to use it, in several charity cases, showing the husband how to apply the sponge and bandages, the recovery being as rapid as if I had done the dressing myself. I have used this treatment in every fresh case of mammary abscess which has come under my observation in the last eighteen years (and I may say that the number has been fairly large, in some the abscess involving the whole gland, which floated in a sea of pus), and in not a single instance have I failed to achieve a prompt cure. Several times the abscess was of longer duration than a few weeks, and had been treated by repeated incision, irrigation,

¹It may be as well to mention that nursing from the sound breast should be suspended until the sick breast is well. Convalescence would only be retarded by the sympathetic congestion of the inflamed breast produced by the physiological activity of the healthy side. If the treatment is successful and the abscess heals within a week or ten days, it may not be impossible to restore lactation on the sound side, and possibly even in the one that had undergone suppuration. The compression of the healthy breast by the bandages which cover the diseased one controls the lacteal secretion, and eventually, if kept up long enough, suppresses it.

drainage, and gauze packing by other surgeons, and still, by sponge compression, aided by judicious pressure with wads of gauze or wet cotton, the old sinuses were speedily closed without knife or curette. However, as I have already stated, old necrotic abscesses are not fit cases for this treatment until a healthy granulating wound has been secured. One old abscess was of a non-puerperal, traumatic origin; it had lasted over a year, and had been unsuccessfully treated with plasters and ointments. I cured it permanently in a week by sponge compression. In several instances the abscess was submammary, and I found these cases particularly amenable to the treatment. I have never brought this method prominently before the profession, except casually on two recent occasions (see my letter in the March, 1893, number of The American Journal of Obstetrics), partly because I considered it so self-evident that undonbtedly it must have been employed by others as well as by myself, perhaps before me, and partly because gynecological topics have gradually occupied my attention more than those of a purely obstetrical nature.

- 2. Leopold and Mironoff: Ovulation and Menstruation (Archiv für Gynükologie, Band xlv., Heft 3).—This paper forms a continuation of the well-known investigations by Leopold published in 1883 in the Archiv für Gynükologie. Its deductions are:
- 1. Ovulation usually, but not always, accompanies menstruation.
- 2. Menstruation is dependent upon the presence of the ovaries and a development of the uterine mucous membrane; without these typical menstruation is impossible. Menstruation does not occur if the ovaries are absent or the uterine mucous membrane is in an atrophic condition. The perfect development of either alone is not sufficient. Maturing and rupturing of a Graaffian follicle is irrelevant.
- 3. Ovulation usually coincides with the menstrual epoch. If the influx of blood to the genitals lasts for a few days a typical corpus luteum results.

4. Under physiological conditions ovulation rarely occurs be-

tween the menstrual crises.

5. An atypical corpus luteum is formed by the flow of blood

to an immature, not rupturing Graaffian follicle.

6. Graaffian follicles are present during the progress of senile atrophy; these may rupture and change into typical corpora lutea.

Menstruation accompanied by ovulation is the more frequent, without ovulation the rarer, phenomenon. It is certain that ovulation may take place at the time when menstruation should normally appear but is suppressed by one cause or the other.

- 3. Gärtner: Bacteriological Investigations in two cases OF MELENA NEONATORUM (Archiv für Gynäkologie, Band xlv., Heft 2).—The author subjected two cases of mclena neonatorum to various bacteriological investigations, and from the result of these he reasons that this disease must be of an infectious nature. His conclusions seem to be plausible. He was able to obtain pure cultures of a small, straight bacillus from the feces, blood, and viscera before and after death. In a case which terminated in recovery their gradual disappearance from the blood could be observed. Injecting pure cultures into the peritoneal cavity or infecting the umbilical stump of young puppies, the animals would perish with all the symptoms of melena; subsequent post-mortems demonstrated the typical changes of melena. The discovered bacillus is an actively mobile, short rod. Upon potato cultures it forms a thick, pasty, grayish-brown surface growth, and upon gelatin plates grows as a sharply defined colony about the size of a pinhead, surrounded by a number of concentric rings. It produces gas, stains freely in the various aniline dyes and after Gram. The bacillus is thought to enter the system through the umbilical stump.
- 4. Von Preuschen: Traumatism of the Brain, occurring IN PARTURITION, THE TRUE CAUSE OF MELENA NEONATORUM (Centralblatt für Gynäkologie, 1894, No. 9).—Preuschen criticises Gärtner's paper, and believes that the latter failed in proving the infectious origin of melena. He writes: "Gärtner errs if he thinks that by injecting his bacilli cultures into the peritoneal cavity of dogs he has succeeded in producing the typical picture and lesions of melena; he only produced a hemorrhagic peritonitis." Preuschen claims that brain lesions acquired during the labor are the true cause of melena. His conclusions are based upon the following facts: A primipara, æt. 22, came under Preuschen's observation. Labor was unduly protracted; although the os was fully dilated and the head in the pelvic outlet, there was no advance for several hours. Preuschen applied the forceps, and with a few tractions he delivered a living and fully developed girl. The child, which cried at once, seemed to be perfectly normal. Two days after birth it was seized with vomiting of blood, soon followed by bloody evacuations. Death occurred a few hours later. A post-mortem showed erosions of the stomach mucous membranes, hemorrhagic infarctions of the lungs, and a large extravasation of blood under the tentorium and upon the right hemisphere of the cerebellum. There were no injuries to the cranial bones.

Reviewing the literature, Preuschen found a publication by Schiff (1845), who had shown that injuries to certain portions of the brain cause a softening of, and extravasation of blood into, the nucous membrane of the stomach. With the assistance

of Pomorsky he investigated the correctness of Schiff's statement, and they also found that Icsions in the ala cinerea and crura cerebelli ad pontum et ad corpora quadrigemina would produce hemorrhages of the stomach identical with those of melena. (A detailed description of these investigations is published in the Archiv für Kinderheilkunde, Band xiv.) Although Preuschen's experiments are not yet finished, he publishes some excerpts which deserve more than a passing interest, promising that in an extensive essay, which is soon to appear, he will furnish valuable additions to the knowledge of brain localization. To produce localized brain lesions a drop of a saturated solution of chromic acid is injected into certain portions of the brain (this method, first advocated by Heidenheim, was used by Nothnagel in his well-known investigations of the brain functions). Minute lesions are thus effected, which can be identified after the brain is hardened. The animals used for the experiments (about sixty) were rabbits 4 to 6 weeks old. The regions of the brain experimented upon were the anterior portion of the corpora quadrigemina, pedunculus cerebri (tegmentum), thalamus opticus (anterior tubercle), hippocampus major, stria terminalis, frontal lobe immediately beneath the bulbus olfactorius. Hemorrhagic infarctions of the lungs and extravasation of blood into the stomach follow within two to three hours after the injection of chromic acid into these regions. It was also found that pressure or irritating substances would have similar but lessened effects. [Taking it for granted that Gärtner did not succeed in producing a typical picture of melena by injecting his bacilli cultures into the peritoneal cavity of dogs, Preuschen has failed to explain why these pathological changes followed upon the infection of the umbilical stump with these bacilli. Upon the latter experiments Gärtner lays the greatest stress.]

5. Schütze—Melena Neonatorum (Centralblatt für Gynäkologie, 1894, No. 9)—reports a typical case. A primipara, æt. 16, after a normal labor, gave birth to a well-developed male child. The child showed no traces of hereditary syphilis. portion of the left parietal bone, about the size of a quarter, appeared to be thinner and emitted, when touched, the crackling sound peculiar to parchment paper. The first day of extra-uterine life passed normally. On the morning of the second day, without any warning, there occurred a profuse intestinal hemorrhage. The blood was dark, slightly coagulated, and mixed with normal intestinal contents. The general condition of the child was fair. Cool enemata of barley water were ordered containing liquor ferri sesquichloratis II v., repeated after thirty minutes, and again twelve hours later. The child did not improve, and it died with symptoms of collapse twenty-four hours after the first hemorrhage. During the last few hours the breathing was very

shallow, pulse barely perceptible, skin pallid and cold. The abdomen was not tympanitic; vomiting of blood occurred only once.

Post-mortem.—Body very pale, rigor mortis. Black, thick blood flows from the mouth. The umbilical stump presents nothing abnormal. No free blood in the abdominal cavity. The omentum is slightly injected. Liver substance very pale. Spleen small and soft, Malpighian bodies faintly marked. The stomach contains much gas and a few teaspoons of coagulated blood; mucous membrane normal. Duodenum, jejunum, and upper half of ileum free from blood. The lower portion of the small intestines, and the large intestines, are filled, and at places distended, with blood coagula. The mueous membrane of the intestines is normal, shows no erosions, but is hyperemic in a few spots. Lungs emphysematous. Heart normal, right side empty. No cephalhematoma. Cranial bones very thin. The brain convolutions appear depressed and very pale. Brain substance pale and moist. Lateral ventricles dilated, contain clear serum. Beneath the tentorium cerebelli small extravasations of blood; they are beneath and extend into the substance of the dura mater.

Syphilis, ulceration of the intestines, acute fatty degeneration, and sepsis, possible etiological factors of this disease, could be excluded with absolute certainty.

J. R.

6. Dohrn: A Case of Rupture of the Uterus (Centralblatt für Gynäkologie, 1894, No. 11).—Dohrn reports the following interesting case, which is an excellent illustration of the fact that many cases of ruptured uterus recover under expectant treatment.

A XIpara entered the hospital December 9th, 1893. To reach the clinic she had to travel about fifteen miles in a sleigh. Upon arrival she was semi-conscious; pulse small and rapid (136); face very pale; abdomen tympanitic; uterus firmly contracted, fundus at a level with the navel; a ligated umbilical cord hung from the vagina; there was also moderate flooding. The following history was elicited: The woman was 41 years old; her previous confinements were normal. In the night of December 8th, after a moderate amount of labor pains, the membranes ruptured spontaneously. A midwife was sent for, who diagnosed a transverse position of the fetus and insisted upon the immediate calling of a physician. The latter endeavored to perform version (without anesthesia), but failed to reach the feet. He then attempted to push the presenting shoulder up and bring the head down into the pelvis, in which manipulations he was assisted by the midwife, who made downward pressure upon the head. Suddenly the doctor's hand entered a big cavity, the head escaped into the abdominal cavity, and the labor pains ceased entirely. After this the feet were easily reached and a dead fetus extracted without difficulty. The family now insisted upon an immediate transfer to the hospital. In the hospital, after thorough disinfection of the vulva and vagina (no douching), a hand was introduced into the vagina. The hand entered a large rent in the left side of the cervix and fornix vaginæ, encountering coils of intestines, and amongst these the placenta. After removal of the placenta and reposition of the intestines, the vagina was tightly tamponed and a firm abdominal binder applied. Active stimulation soon improved the patient's condition. The tampon was removed six days later, and, except for a complicating pneumonia, reconvalescence was uninterrupted. She left the hospital January 16th, 1894.

7. ABEL: A CONTRIBUTION TO THE TECHNIQUE OF LAPARATOMY (Archiv für Gynäkologie, Band xlv., Heft 3).—One of the difficulties encountered in the performance of laparatomies is the prevention of abdominal hernia. The attempts to remedy this evil by the employment of various suture methods and materials have all been futile. Abel believes that the present method of making the incisions in the linea alba is at fault, because the structures there encountered do not possess the qualities necessary to form firm scar tissue. A scar, which in the beginning looks perfect, soon stretches under the constant pressure of the viscera and permits the formation of an abdominal hernia.

The author advocates the incision of the abdominal walls at one side of the linea alba. In this way the rectus muscle is divided, and its subsequent union will form a firm scar which does not stretch. During the last two and a half years he has thus operated in seventy-five cases, obtaining a perfect union every time. In none of these has he found any tendency to abdominal hernia, although they were carefully examined. His method

of operating is the following:

Incision parallel to, and about one to one and a half centimetres from, the linea alba. The subcutaneous fat is divided until the rectus comes into view. Any bleeding from the divided small veins is arrested with artery clamps. The sheath of the rectus is opened, the muscle divided with the tips of the fingers, and not with the knife as has been suggested by Fritsch. This makes the line of division often look very ragged, but this is claimed to be no disadvantage. The division of the remaining fascia, subperitoneal fat, and peritoneum is after the usual methods. Before opening the peritoneum all bleeding—which, however, is generally trifling—must be arrested. No particular stress is laid upon exact sewing; Abel uses two to four deep sutures, which include the muscle and peritoneum, and the skin is united by a number of superficial sutures.

J. R.

8. Flatau (Centralblatt für Gynäkologie, 1894, No. 12) has

performed a number of abdominal sections in the same way as described by Abel. He incises the abdomen one and one-half centimetres to the side of the linea alba; the rectus is divided with a blunt instrument or the finger. As suture material silkworm gut and silk are used. The results have been uniformly good. He sews after the method advocated by Fritsch, entering and withdrawing the needle close to the divided edge. Flatau's experience with the extramedian incision extends over two and one-half years; during this time he has performed thirty-three abdominal sections. There has been no hernia in any case, although his patients are mainly constituted out of the laboring classes.

J. R.

9. Pinard, A.: Symphysiotomy in the Baudelocque Clinic during 1893 (Annales de Gynécologie, January, 1894).—From the 1st of January to the 7th of December, 1893, thirteen symphysiotomies were performed in the Baudelocque clinic, two by Dr. Lepage, two by Dr. Varnier, nine by Pinard: nine times upon multiparæ, four times upon primiparæ; ten times upon rachitic pelves very nearly symmetrical, three times upon asymmetric pelves. The results were as follows: twelve women recovered, one died; thirteen children lived.

Now for a more detailed account. The only complications noticed were an exaggerated development of varicosities in one case, and an abnormal formation of the symphysis, which caused M. Varnier to perform pubiotomy instead of symphysiotomy. No accidents occurred during section and enlargement of the pelvis. No hemorrhages occurred other than the venous hemorrhages incident upon section of the symphysis and the subpubic ligament, and easily checked by the use of one tampon.

During extraction of the fetus, however, in two cases the anterior wall of the vagina was lacerated in such a way that the vagina communicated with the wound. The tears were not sufficiently large to necessitate suture, vaginal tamponing with iodoform gauze being all that was necessary to induce union by first intention.

In one case there was a *lesion of the bladder* near the urethral opening, resulting in a vesico-vaginal fistula. It was almost unavoidable, owing to the fact that the defective pelvis and ankylosis of the right leg so interfered with motions of abduction that ischio-publiotomy was not to be thought of and that simple symphysiotomy alone was possible; when the section was made the public bone separated asymmetrically, the right side remaining more or less immobile, so that the bladder was pressed against it by the head of the fetus and injured in consequence. The sequelæ were, however, excellent, the public wound uniting by first intention and the woman recovering perfectly.

In another case incontinence of urine was noticed a few days after the operation, with no perceptible lesion of the urinary

tract. Dr. Larat diagnosed the case as one of hysterical paresis

of the vesical sphineter, and it was eured by electricity.

The case which ended fatally was that of a woman who, when she came to the hospital, had been in labor three days; the ovum had been ruptured sixty-six hours and the amniotic fluid was green, thick, and very fetid. The pulse was 84, the temperature 98.6°. The child was alive, vertex presentation, head not engaged, heart sounds arhythmical. In spite of this very unfavorable condition Pinard decided to operate, believing that symphysiotomy offered the only hope of saving the patient. But she died on the ninth day from septicemia, with staphylococci, in spite of careful antisepsis.

What lessons can be learned from this second year of work in

symphysiotomy?

Nothing is to be added to, and no modifications made in, the directions previously given for the operatory procedures, but the point made last year is emphasized by one of these cases, namely: "When you wish to enlarge the pelvis, provide yourself, not only with a bistoury, but with a chain saw, seissors, and a hammer, in ease you should find a symphysiotomy impossible and a pubiotomy necessary." The experience of the past year has also taught that in primiparæ it is wise to dilate the soft pelvis, vagina, and vulva, by means of Champetier and Ribes' bag, before dividing the bony pelvis, in order to avoid laceration of the soft parts during extraction and to facilitate the passage of the fetus. These lacerations may also be in large measure avoided by following Varnier's injunction to draw the thighs

together when the head is engaged.

When the pelvis is enlarged and dilatation complete, should the forceps be immediately applied to the presenting head? Pinard believes that when the head is high it is better to let it become engaged by the uterine contractions, or else to assist it by manual hypogastric pressure. The question, however, requires further study. As to the relations of symphysiotomy to other obstetrical operations during the year 1893 in the Baudelocque elinie, no embryotomy has been performed during that time upon a living child, and no labor has been induced. forceps has been applied a few times when the head was beginning to engage. The results of the past two years compare so favorably with those of 1890 and 1891 that an impartial observer could scarcely fail to be convinced of the value of symphysiotomy. Its action has been direct and indirect—direct by increasing the size of the pelvis, and indirect by preventing the induction of labor in a number of cases of narrow pelves, because the operator, armed with his bistoury and ready to perform symphysiotomy, waited for further indications, and the child was meanwhile expelled spontaneously.

Never were there more eases of constricted pelves in the

clinic, never fewer operations; and this was because Pinard

applied with unusual severity the following rules:

1. The relinquishment of induced labor in any case where symphysiotomy would permit the passage of the head of a fetus

2. Relinquishment of forceps application in cases of bony obstruction (whether in the superior strait, the excavation, or

the inferior strait).

3. Temporary enlarging of the pelvis (by symphysiotomy, publicationy, ischio-publicationy, coccygotomy) in any case in which there is bony obstruction not overcome by the contractions, in which the head is properly placed, and where calculations indicate that section of the pelvis will allow the head to pass.

4. Utero-ovarian amputation in cases of absolute narrowing. Pinard has given up the application of the forceps at the superior strait, because he has noted too many fractured fetal skulls; has abandoned the practice of induced labor, because in too many cases he has seen the child born dead, in too many cases the intervention was too late to be of use, and, finally, because the most recent neuropathological researches have shown that a child born with difficulty before term is more subject than other infants to cerebral paralysis.

ERRATUM.

On page 709 of the Journal for May, in the review of the "Medical Report of the Lying in Hospital of the City of New York" (Midwifery Dispensary), line 35 should read: "A successful case of Cesarean section performed in a tenement houseis reported by Dr. Markoe."

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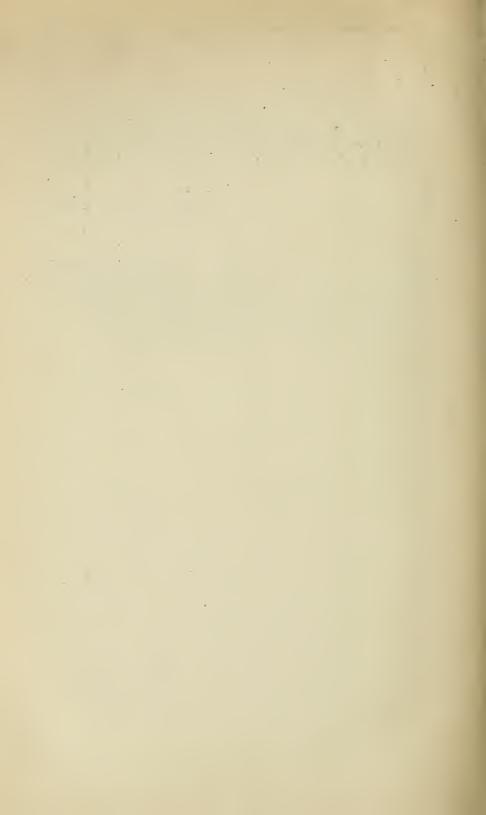
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